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THE

GENEUPHONIC GRAMMAR.

AN ORIGINAL AND CONDENSED

GRAMMAR

OF

HARMONY, COUNTERPOINT,

AND

MUSICAL COMPOSITION;

OR THE

GENERATION OF EUPHONY

REDUCED TO NATURAL TRUTH;

PRECEDED BY

THE ELEMENTS OF MUSIC:

BY THE LATE

GENERAL J. J. DE VIRUÉS Y SPÍNOLA,

KNIGHT OF THE ORDERS OF ST. JOHN AND CHARLES III; COMMANDER OF THE ORDER OF CALATRABA; GREAT CROSS OF ISABEL THE CATHOLIC; F.R.S. OF ST. FERDINAND, ETC. ETC. ETC.

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RESPECTFULLY DEDICATED, BY PERMISSION, TO HIS ROYAL HIGHNESS

THE PRINCE ALBERT.

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TO

FIELD MARSHAL HIS ROYAL HIGHNESS

THE PRINCE ALBERT,

K.G. ETC. ETC.

GRACIOUS PRINCE,

Your Royal Highness's mind has disdained to confine its cultivation within the limits generally assigned to the education of Princes. Fully imbued with the spirit of improvement so characteristic of our age, your Royal Highness has achieved a true and lasting glory in becoming not only proficient in many branches of human knowledge, but an able judge in most of them. The reports of various learned bodies, the conversations of the drawing room, and the voice of the press daily reveal fresh and striking proofs of the attainments extended by penetration, and of the penetration refined by study by which Your Royal Highness is so eminently distinguished.

I have, now, the honor to express to your Royal Highness my most respectful and heartfelt thanks for the permission which you have so graciously deigned to grant me of dedicating to your Royal Highness a Work which, it is presumed,

will effect a complete reform throughout the musical world. In presenting such a work to the British Public, under the patronage and protection of your Royal Highness's exalted name, no doubt can be entertained of a triumphantly successful result. It is universally known that your Royal Highness has the taste and refined judgment to be more proud of being the Husband of a High and Noble-minded WIFE than the exalted Consort of a powerful QUEEN; and the Author of the accompanying Work, in humble imitation of your Royal Highness's illustrious example, feels more honored by its appearing under the auspices of the eminent Composer, the correct Harmonist, and the enlightened Protector of Science, Literature, and the Fine Arts than by its being supported by the patronage of one of the most exalted Princes of the earth.

Be pleased to accept, GRACIOUS PRINCE, the expression of the profound respect with which

I remain

YOUR ROYAL HIGHNESS'S

Most devoted and very obedient,

Humble Servant,

ALPHONSO CHALUZ DE VERNEVIL.

LONDON:

November 22, 1849.

CONTENTS.

ELEMENTS.

CHAPTER I.

THE STAVE, NOTES, SCALES, CLEFS, &c..... 1

CHAPTER II.

SPECIES AND PROPORTION OF NOTES: BAR, RESTS, DOT, TRIPLETS, THE ARPEGGIO, SYNCOPATION, RHYTHM.... 4

CHAPTER III.

CHROMATIC SIGNS, MUSICAL SIGNS AND EMBELLISHMENTS, MOVEMENT..... 11

CHAPTER IV.

DEGREES, SOUNDS, OCTAVE, MELODY AND HARMONY—TONES AND SEMITONES—DIATONIC, CHROMATIC, AND ENHARMONIC GENERA—INTERVALS, AND THEIR INVERSIONS—CONSONANCE AND CONCORDS; DISSONANCE AND DISCORDS. 19

CHAPTER V.

COMPLETE THEORY OF KEYS AND MODES..... 29

CHAPTER VI.

PRINCIPAL RULES OF THE THEORY OF CHORDS..... 53

PROLEGOMENA.

72—90.

§ 1. Heptachord, Scales, Gamut, Octave, Octavism.
§ 2. Key, Signature.
§ 3. Degree of Importance of each Note.
§ 4. Cadence, Precadence, and Transcadence.
§ 5. Major and Minor Mode.
§ 6. The Octave equal to the Denominative Sound.
§§ 7 and 8. All the Rules of Harmony contained in an Octave.
§ 9. Key and Mode indifferent in Harmony.
§ 10. Unison, Fifth, Octave, no Consonances.
§ 11. There are no imperfect Consonances.
§ 12. Acuteness. § 13. Amphibophony. § 14. Geneuphony.
§ 15. Heptachordic. § 16. Eterotonic or Eterogamic, and Homotonic.
§ 17. Monochord Relation. § 18. Monosound or Unison.
§ 19. Euphony and Cacophony. § 20. Precadencial or Pretonic and Transcadencial. § 21. Resonantic Relation. § 22. Sonorousness.
§ 23. Tonic System. § 24. Triad. § 25. Trisound. § 26. Typometer.
§ 27. Exclusive Property of the Third.
§ 28. Special Property of every Sound.
§ 29. No Compound Harmony.
§ 30. Dissonance of all Intervals but one,
§ 31. The Matter of Harmony.
§ 32. Process of Melody and Harmony.
§ 33. Result of every Stir of the Melody.
§ 34. Generation of the Bass.
§ 35. Choice of the Inversions of Intervals, or Election of the Octave.
§ 36. Movements of the Bass and of the other Parts.
§ 37. Modulation.
§ 38. Transition.
§ 39. Difference between Modulation and Transition.
§ 40. Consonance and Harmonization of Tetrachords. Origin and Affinity of Gamuts. Generation of the Typometric or Thorough Bass. Advice about Modulation.
§ 41. Relation of the extreme Notes of every Tetrachord.
§ 42. March of Melody. Obliged Accompaniment of the same.
§ 43. Mould of Melody. Result of the Interruption of the Typometric Order.
§ 44. When an absolute Cadence is final.
§ 45. Superfluous Denominations, useless Rules in ancient Music.
§ 46. Resonance. Tonic Sound. Harmonic Generator.
§ 47. Definition and characteristic Nature of Dissonance.

§ 48. The only real Dissonance.
§ 49. Tritone.
§ 50. True Nature of the Major Third.
§ 51. Modulation wants neither Preparation nor intermediate Chords: it is effected through only one Rule: it is a simple operation.
§ 52. The Melo-harmonic Typometer.
§ 53. Effect of the Adjunction to the perfect Chord or Cadence of any other Note but the Octaves of its own Sounds.
§ 54. Subordination of the second and the third Group of the Typometer to the first, and why.
§ 55. What two Sounds may be added to the Transcadence: which of the two is the most eligible. Preparation of Fifth.
§ 56. Of what Sounds the Precadence may receive the incorporation. Character of the three Typometric Chords: their Link.
§ 57. The same Subject continued. Why the Chord of *Sensible* on the *Dominant;* henceforth, the Precadence is accepted by the Ear, notwithstanding its dissonance of Second.
§ 58. The same Subject continued. Cause of the Subserviency of the Second and the Third Typometric Chord to the First.
§ 59. Fruitful Effects of the Distribution of the Sound of the Heptachord into three Typometric Groups. The Typometer is the Mould of Melody and Harmony, it explains all possible musical Operations.
§ 60. Indivisibility, or Unalterability of Consonance. Important Observations on the Fifth.
§ 61. The same Subject continued. Supposed Chord of *Imperfect or Diminished Fifth.* Supremacy of the Third upon the Fifth.
§ 62. Chromatism and Enharmonism examined as musical Genera.
§ 63. Number of Tonics perceivable by the human Ear.
§ 64. Perceptibility on Bowed Instruments of more Commas in the Division of the Tone or Degree, than on Fretted and Keyed Instruments.
§ 65. Insignificance for Harmonic Calculation of the Differences arising from the division of the Natural Semitones and the whole Tones or Degrees into an equal number of Parts.
§ 66. Whether the Seventh Note is a Tonic as well as the other Sixth. Nature of the Chord *Si, Fa.* Results arising from the teaching of Music being grounded on the belief of a diversity or difference between Scale and Scale.
§ 67. Identity of Preparation between the Key just entered into and the preceding one, whatever may be the relation of the abandoned Key with the new one.
§ 68. Refutation of a gross error on account of the supposed relation between certain Keys.

§ 69. How a Melody may be accompanied in another Key than that in which it is written.
§ 70. Harmonization of Passing Notes.
§ 71. Difference between the Table of Polytonogamism and the Typometric Table. Special Utility and Commodiousness of the latter.
§ 72. Conditions of Consonance in Chords. Effect arising from a Series of Major Thirds. Generation of Dissonance. Clashing of Tonics. Generation of Scales. Appearance of a fresh alterative Sign at the extreme Note of the Major Third above the Fifth of the new Scale.
Example of Modulation in an Harmonic March by avoided Cadences, viz. by Precadences. Demonstration of every Cadence being the incomplete Precadence of the Scale built on its Note 4.
Typometric Co-ordination. Musical modificative and incidental Phrases; or the Parentheses in Melody.

GENEUPHONIC GRAMMAR
OF
HARMONY, COUNTERPOINT, AND MUSICAL COMPOSITION.

THE PRACTICAL TREATISE.

CHAPTER I.

PRELIMINARY NOTIONS.—AXIOMS..... 91

CHAPTER II.

OF HARMONY..... 93

CHAPTER III.

ORIGIN AND CONSTRUCTION OF GAMUTS.—TABLE OF HEPTACHORDS..... 96

CHAPTER IV.

POLYTONISM AND POLYTONOGAMISM..... 103

CHAPTER V.

TYPOMETER..... 110

CHAPTER VI.

RULES ON HARMONY. 119

CHAPTER VII.

THE SAME SUBJECT 120

CHAPTER VIII.

GENEUPHONIC RULES ON HARMONY. MODULATION AND TRANSITION 134

CHAPTER IX.

ON COUNTERPOINT. 142

CHAPTER X.

THE GOLDEN RULE. 151

CHAPTER XI.

COUNTERPOINT OF TREBLE AND BASS. 154

CHAPTER XII.

COUNTERPOINT OF TREBLE, COUNTER-TENOR, AND BASS. . . . 157

CHAPTER XIII.

COMPLEMENT OF THE PRECEDING COUNTERPOINT. 160

CHAPTER XIV.

RHYTHM.—PREPARATORY EXPLANATIONS. 161

CHAPTER XV.

COUNTERPOINT OF TWO TO ONE. 165

CHAPTER XVI.

COMPLEMENT OF THE FOREGOING COUNTERPOINT.—ADVICE. . 168

CHAPTER XVII.

COUNTERPOINT OF FOUR TO ONE. 169

CHAPTER XVIII.

EXCHANGE OF PARTS.—ALTERNATION. 173

CHAPTER XIX.

COUNTERPOINT OF TWO NOTES AGAINST ONE, WITH SYNCOPES. 176

CHAPTER XX.

THE DIALOGUE..... 180

CHAPTER XXI.

DISSONANCES..... 196

CHAPTER XXII.

DISSONANCES CONTINUED. MODULATIONS. HARMONIC MARCHES..... 203

CHAPTER XXIII.

FLOURISHED OR UNLIMITED COUNTERPOINT..... 211

CHAPTER XXIV.

COUNTERPOINT DOUBLE AT THE OCTAVE..... 216

CHAPTER XXV.

EXPLANATION OF THE EXAMPLES OF VARIOUS COUNTERPOINTS. 221

CHAPTER XXVI.

COUNTERPOINTS AT THE TENTH AND AT THE TWELFTH, QUADRUPLE COUNTERPOINT AT THE OCTAVE..... 234

CHAPTER XXVII.

INVERSIONS OF THE TRIPLE AND OF THE QUADRUPLE COUNTERPOINTS AT THE OCTAVE..... 243

CHAPTER XXVIII.

OF MUSICAL COMPOSITION..... 245

CHAPTER XXIX.

PRECADENCIAL ALTERATIONS, THEIR USE IN HARMONY, COUNTERPOINT, AND MUSICAL COMPOSITION. HARMONIC ROOT. 248

CHAPTER XXX.

CONTINUATION OF PRECADENCIAL ALTERATIONS. USE OF THE HARMONIC ROOT..... 269

CHAPTER XXXI.

DIVISION OR STRUCTURE OF MUSICAL PIECES..... 280

CHAPTER XXXII.

SELF EXAMINATION, IMPROVEMENT, AND COMPROBATION.... 281

CHAPTER XXXIII.

OF THE FUGUE..... 300

CHAPTER XXXIV.

GENERAL RULES OF THE DIFFERENT KINDS OF FUGUE..... 309

PART II.

A THEORETICAL AND CONFIRMATORY TREATISE.

CHAPTER I.

OF THE THREE CHARACTERS INHERENT TO ANY PIECE OF MUSIC..... 347

CHAPTER II.

OF THE APOCRYPHAL ORIGIN OF THE DIATONIC GAMUT.... 350

CHAPTER III.

OF THE HARMONIC IDENTITY OF THE OCTAVE, OR THE EQUISONANCE OF THE OCTAVISM..... 353

CHAPTER IV.

OF THE POLYTONISM OF CHORDS..... 354

CHAPTER V.

EXPLANATION OF THE MELO-HARMONIC TYPOMETER..... 361

CHAPTER VI.

MELO-HARMONIC PROPERTIES OF THE THIRD..... 386

CHAPTER VII.

PRECADENCIAL FORMATION. MECHANISM OF MELODY. ADVICE. THE GREEK GAMUT..... 392

CHAPTER VIII.

OF THE THREE DOMINANTS..... 401

CHAPTER IX.

RETROSPECTION TO THE GOLDEN RULE, TO SYNCOPES, TO DISSONANCES, TO MODULATIONS AND TRANSITIONS..... 409

CHAPTER X.

OF THE ALTERATION OF THE TRANSCADENCE. SECOND DIALOGUE..... 414

CHAPTER XI.

TONISM AND MODISM..... 421

CHAPTER XII.

TYPOMETRIC RETROGRADATION. ANALOGY OF SCALES. TEMPERAMENT..... 434

CHAPTER XIII.

ACCORDANCE OF THE SONOROUS WITH THE RHYTHMICAL POTENCY. INITIATIVE MOVEMENT. SHAKE AND CADENZA. PEDAL..... 437

CHAPTER XIV.

SPECIAL CONFIRMATORY COMPARISONS..... 444

CHAPTER XV.

GREAT MODELS..... 459

INTRODUCTION.

THE ancient authors* who wrote on music, the modern ones† who have didactically treated of that science, and the writers now living‡, have all acknowledged that the solfeggios, the grammars and dictionaries of music, the elements of, as well as the treatises on, harmony, counterpoint, and composition, even those of the greatest extent hitherto published, are, without exception, grounded on systems more or less ingenious, but also more or less false or erroneous, bristling with a throng of entangled, perplexing, impracticable rules, and strewed, besides, with numberless contradictions which thwart and destroy each other, and bewilder the reader and pupil, whose patience they weary, and whose perseverance they exhaust. One of these authors, Mr. Catel, in his *Elementary Treatise on Theoretical and Practical Music*, says that—
" *It is only by closely examining all the evident data, by comparing*
" *them with each other, and by discovering in one or in a few of them*
" *an origin common to all others, that professors and philosophers*
" *may be brought to reach the end, so much wished for, of giving*
" *the science of music a complete, precise, and luminous theory :*" and most of them have avowed that all the theories known to this day

---

* Pythagoras, Architas, Aristoxenes, Polomeus, Euclid, Aristotle, Plato, Diocles, Cassiodorus, Plutarch, Macrobius, Vossius, Denis of Halycarnassus, Boetius, Dydimus.

† Guido d'Arezzo, Celio-Rodriguez, Rameau, Gerbert, Almeida, Descartes, Hita, Rami, Jimenez, Bacon, Euler, Fartini, Kircher, Bontempi, Franklin, Morigi, Asioli, Fenaroli, Tosca, Fuchs, Imbimbo, Nassarre, Viana, Bails, Remacha, J. J. Rousseau, Richter, Cerone, D'Alembert, Kalkbrenner, Gretry, Rodolphe, Bethizy, Serres, Yriarte, Frike, Buhter, Burns, Momigny, Gossec, Viehter, Strings, Martini, Paulucci, Schneider, Engelbach, Lacepede, Emy de l'Illet, Berton, Cherubini, Lesueur, Mehul, Callcott, Busby, Albrechtsberger, Catel, Kuhn, Weber.

‡ Fétis, Castil-Blaze, Reicha, Kiesewetter.

are reared on tottering foundations, and supply merely conjectural explanations.

Let us observe how some others among them express themselves on the subject.

" The theory is reduced to certain mystical subtleties, of which " the application and truth have nothing either constant or certain." —*Bacon, Hist. Mus.*

" It is not that physicians have not explained all this ; but how " conjectural are their explanations ! and, upon a close examination, " how weakly grounded are they discovered to be!"—*J. J. Rousseau, Dict. de Mus.* Art. *Dissonance.*

" I have presumed that the suggestions of the ear depended on " principles extremely simple; that these principles, once tho- " roughly understood, could not only account for every thing " practised in point of harmony, but also indicate even the course " followed by the ear, as it were instinctively, in the combination " of its best productions. I have thought, in consequence, that we " ought not to despair of the attainment of a radical and fruitful " theory of music, and particularly of harmony, which would enable " us not only to explain and appreciate, but even to anticipate the " operations of the ear."—*Serres, Essai sur les Principes de l'Harmonie.*

" In exhorting philosophers and artists to make fresh efforts " to bring the theory of music to perfection, we must caution them, " at the same time, against the misconception of that on which it is " founded. It is solely by closely observing facts, by reconciling " one with the other, and *by making them all, if possible, depend* " *upon a single fact*, or at most upon a very few principal ones, that " they can succeed in giving music a correct, lucid, and unex- " ceptionable theory."—*D'Alembert, Traité de Mus. Discours Préliminaire.*

" The commission, after having consulted the best works which " treat on harmony, to avail itself of respectable authorities, or to " oppose *errors which time has consecrated and time will destroy*, " has heard the exposition of three new systems, &c. &c. .. In " that conflict of contrary opinions, maintained either by the par- " tisans or the adversaries of the system of the Fundamental Bass, " the Commission being *unable to discern all the real truth*," &c. &c. —*Report of the Commission of the Conservatory of France appointed for the digesting of a Treatise on Harmony, 15th Floreal, of the year 9 of the Republic:* 1801.

" I dare flatter myself that the publication of this treatise will

" contribute to increase the knowledge of my contemporaries in an " art *which is still far from its perfection;* and I shall afterwards " employ myself in the composition of a Theory of Music, in which " *I shall develop more amply the doctrine of sounds and keys.*"—*Kalkbrenner, Preface and Chapter I of Richter's Treatise on Harmony.*

" What is tiresome, are the continual battles I am incessantly " obliged to fight against so many doctrines *opposed to the truth*, which " that work contains, and where the *erroneous ideas of Rameau, " D'Alembert, of the Abbot Feytou, and of many others*, are collected, " and in which are gathered, in spite of judgment and experience, " all that is known as being false. I pity those who have stupidity " enough to stuff their minds with *such nonsense:* they are far less " advanced than those who never opened a book of theory."—*De Momigny, Preface to the Dictionary of Music of the Methodical Encyclopedia.*

" To fill the still remaining chasm in scientific instruction, to " supply a succinct but lucid system of musical precept and musical " example, has been the object of the present publication."—*Thomas Busby, Preface to the first edition of his Grammar of Music.*

" There are many points upon which the didactic authors *do not " entirely agree, and even in the purest sources many errors are to " be found from time to time.*"—*Castil-Blaze, Preface to his Dict. of Music.*

" The present volume owes its origin to a conviction on the part " of the author that, among the numerous theoretical works on " music, NOT ONE is to be found in which the elements of harmony " and composition are displayed in a point of view corresponding " with the present state of the science, and treated in a *concise, " perspicuous*, and *complete* manner, so as to serve both as a *compen- " dium for tuition, and a guide for self-instruction.*"—*F. Schneider, Preface to his Elements of Musical Harmony and Composition.*

" *A want of simple and luminous principles* has for ages im- " peded the progress and diffusion of musical science. *Concealed " and overwhelmed* as it lay, and *still remains* in a great degree, " *under loads of scholastic rubbish*, the heap has been stirred and " raked up by the thousands of plodding votaries, most of whom " have carried away the rubbish triumphantly, thinking that, " *with a smattering of a few ill-understood Gothic technicalities*, they " had brought off the very substance and essence of the art. De- " lighted with the delusive treasure, they thought that the mystery " of harmony consisted of a *multitude of arbitrary and gratuitous " rules*, in the knowledge of a great variety of hard names of chords,

" and in the capability of designating these by a *motley combination*
" *of figures heaped up above each other without system and without*
" *reference to the true principles of the harmonic science.* This know-
" ledge generally goes by the singular name of *Thorough Bass*, the
" idol of their worship. But the *confused patch-work doctrine* at no
" time could boast of many *proselytes*, and the flock is daily dimin-
" ishing. By far the greater number of disciples, wearied by *fruit-*
" *less attempts to discover something like principle and system*, re-
" nounce the ungrateful pursuit: others, by a more indefatigable
" perseverance, arrive at a stage of attainment which enables them,
" like their masters, to make a parade of technical forms, words,
" and figures, of *little or no utility to the science* or themselves, ex-
" cept to confer a slender reputation of musical learning; while a
" select few, by the aid of superior intellect and enlarged views of
" their own, contrive to fill up the *numerous gaps and imperfections*
" *of the crazy edifice*, and to fashion it into some rational shape,
" available to themselves at least."—*Engelback, Preface to his English translation of F. Schneider's Elements of Musical Harmony and Composition.*

" My only purpose, in undertaking the present work, is to en-
" deavour to fill up the *numerous vacancies*, and to put an end to
" the *numerous contradictions*, which are to be met with in all the
" theoretical works on the harmonical science which have come to
" my knowledge."—*Albrechtsberger, Introduction to his Treatise on Harmony and Counterpoint.*

" Should the author be fortunate enough, by the present work,
" to render *less abstruse* the interesting subject of the science of
" music, he will feel himself amply repaid," &c. &c.—*J. B. Logier, Introduction to his System of the Science of Music and practical Composition.*

Godfrey Weber, who, thirty years ago, filled the musical world with his fame as a great theorist, says, in the third edition of his *Theory of Musical Composition, treated with a view to a naturally consecutive arrangement of topics*, that " so far as music is concerned,
" the progress made for the last ten years in practical composition
" has been out of all proportion to that which has been realized in
" the correspondent theoretical doctrines, the latter yet remaining
" in a very rude state. Whoever doubts the fact, may readily satisfy
" himself of this truth, by merely enquiring of the multitudes
" who every day fruitlessly endeavour to derive the requisite
" assistance from the treatises on composition, or the miserable
" thorough-bass schools, which have hitherto been published.

" The more uncultivated, therefore, this field of our musical " literature has heretofore lain, and the more imperatively and " universally the demand for instruction upon the fundamental " principles of harmony is now urged upon us from all practical " musicians, and from all friends of the art who are not satisfied " with being merely mechanical practitioners, or such shallow ama- " teurs as can realize only the most superficial pleasure from the " art, but who aspire to higher attainments, so much the stronger " is the claim resting upon us to furnish as fully as possible those " peculiar facilities for attainment which the hitherto much- " neglected theory of the subject can supply.

" It is an honor to the taste of our age that now so many of the " better musicians and amateurs, even without any direct intention " of being themselves composers, still cherish an ardent desire to " become acquainted with the fundamental principles by which " tones are connected into melodies and harmonies, for the purpose " of enabling themselves to conceive and communicate a rational " idea of the good or ill effect of this or that combination of tones, " and of the beauty and deformity of this or that musical passage or " piece. Such an aspiration is no less commendable in itself, than " of happy omen to the art.

" I regard this mode of treatment as the only proper one, and " as that alone which is adapted to the nature of the subject, or to " the removal of the dark cloud which has arisen—not indeed " so much from the intrinsic difficulties of the subject itself, as from " the defective manner of treating it—and which has so seriously " embarrassed the student's progress to a knowledge of the art.

" It should be further observed, that my Treatise on the Theory " of Musical Composition is by no means, as many may suppose, " intended to be a system, in the philosophico-scientific sense of " that term,—by no means a combination of truths, all derived in " the manner of logical sequence from one grand fundamental prin- " ciple. On the contrary, it is one of the most radical features of " my view, that the musical art is not susceptible of such a system- " atic establishment, or at least that it has thus far failed of proving " itself to be so. The little truth which we have as yet discovered " in the realm of musical composition, consists merely in a number " of experiments and observations upon the good or bad effect of " this or that combination of tones. But an attempt to derive these " facts of experience, in a logically consecutive manner, from any " one leading principle, and to reduce them to the form of a philo- " sophical science, to a system, has always thus far, as I have had

" but too frequent occasion already to remark in the course of this " Treatise, been destined only to a signal defeat. We every where " meet with the most melancholy demonstrations of the fact, that " theorists hitherto, instead of first investigating as fully as possible " the individual phenomena of the goodness or badness of sound in " case of this or that combination of tones, and then perhaps setting " about the construction of a system, have precipitately and prema- " turely begun to construct such a system in the very outset, and " have sought to brace it up by the imposing form of a mathema- " tical foundation; and when afterwards, as must naturally and " necessarily be the case, a multitude of phenomena present them- " selves, which disagree with and oppose the system thus hastily " adopted, they, instead of suffering themselves to be awakened " thereby from their blissful dream of confidence in their system, " seek rather to dispose of the difficulty by consigning these phe- " nomena to the category of exceptions, liberties, licences, ellipses, " and catachreses!

" I must be permitted, in conclusion, to say a few words in jus- " tification of the freedom with which I have so often ventured to " speak of venerable and established doctrines, as only half true, " or as wholly false. I certainly take no pleasure in differing from " others, any farther than I am compelled to differ by a regard to " truth. Nor will I apply to these revered systems of olden " days, and to the inextinguishable race of their ancient and mo- " dern regenerators, Göthe's humorous figure of the old Castle, " originally built with childish precipitation, and afterwards, for " the sake of covering the defect of its original plan, furnished with " the most variegated modern bulwarks, trenches, towers, balconies, " and port-holes, and enlarged by additions, wings, and porticos, " connected with one another by the most singular galleries, halls, " and passage ways—a castle which, though indeed for the simple " reason that it has never been seriously attacked, has never been " taken; and hence has acquired and still enjoys the reputation of " being invincible, while in truth it has long since crumbled to " ruins in itself, and now stands a mere vacant shell; invalids being " its only defenders; though these, it is true, consider themselves " quite prepared for attack!"

Weber at least is sincere; he acknowledges that he has invented no new system, and that he believes it impossible that all musical facts should depend upon a universal principle, upon a sole generating law; ingenuously avowing that he thinks it impossible, because it had not yet been done. The present Introduction

strongly manifests our opinion with reference to this belief of Weber: the perusal of the present work will show where the truth is.

The celebrated classical harmonist, Ant. Reicha, in the fourt edition of his *Course of Musical Composition, or Complete Treatise on Practical Harmony*, declares that "the greatest part of the treatises on musical composition hitherto published, can convey but "a barren knowledge, that of a kind of music in which nothing is "found besides complicated and artificial combinations of harmony; "nothing but the cold productions of an abstract science, the principles and rules of which are little favorable to taste, to imagination, to sentiment, and genius. Those works are consequently "incomplete, and generally in contradiction to modern music. "It is a positive fact, that several authors have published, in our "time, many works differently composed from those of their predecessors; but, notwithstanding the good they contain, many "satisfactory elucidations are still wanted in harmony, and especially upon the following points:—1st. The principal cause which "renders incomplete the theory of the bass; 2nd. an instructive "and complete theory of the modulations; 3rd. the laws of nature "in the connection of chords among them; 4th. a more extensive "theory of the accidental notes, i. e. of those which are not reckoned in the construction of harmony; 5th. the means of creating "marches, or harmonical directions; 6th. the principle by which "we can correctly cut or subdivide the duration of the chords; "7th. the harmonic resources contained in a single scale; 8th. the "possibility of doubling, trebling, and of quadruplicating harmony, "at two, at three, and at four; 9th. the conditions to be observed "in the connection of chords by exceptions; 10th. the art of producing or of exhibiting harmony by means of the orchestra."

After stating that he has given the wished-for explanations on these subjects, as far, at least, as his feeble talents could permit, Mr. Reicha says that he has endeavoured to prescribe rules for writing correctly free music, and for blending together the principles of both ancient and modern music. We gladly proclaim that Mr. Reicha's talents were far from being either feeble or humble; and we do not less gladly acknowledge that he has treated the above questions, and others, with more accuracy, simplicity, and lucidity, than any one had ever done before him. His efforts and his work have been useful to both the science and the art; but we must also say, that although Mr. Reicha, in France, like Godfrey Weber in Germany, has to a certain extent cleared the old roads of their

old rubbish, yet neither has opened any new one. The essence and applications of the harmonic roots; the primitiveness and supremacy of the minor third as a consonance; the true theory of modulation and transitions; the origin and characters of the two modes; the real cause of the birth and affinity of scales; the polytonism of chords; the pure, genuine, and universal nature of the melo-harmonic typometer; in one word, polytonogamism, the sole, universal principle from which all musical laws are derived, and to which they return as to their source, all that remained unknown to both Weber and Reicha, were reserved for the present theory. If Reicha approached nearer to the mark than all his predecessors, without excepting Catel or Weber, he nevertheless stood very far from the exact truth: and those topics above mentioned which he so voluminously explains, as clearly as the old systems could allow him to do, as completely as effects can be explained, the causes of which are unknown,—those matters are unfolded in a few pages of this volume; and its reader can see them through polytonogamism as plainly as he could perceive any object magnified through a clear and powerful perspective glass.

All these authors, therefore, have thought there was no reason to despair of arriving at a theory that would enable its votaries, not only to explain and appreciate, but even to anticipate the operations of the ear; and they have, as the reader has just seen, indicated explicitly enough what course was to be followed by practitioners and composers, in order that they should succeed in forming, for elementary music, harmony, and the science of counterpoint, a grammar which might answer every question, and remove every doubt; which should be both unexceptionable and faultless, and so much the shorter and the easier, that it should rest on a radical, positive, simple but fruitful, single but universal, principle. That great problem is resolved. The author of the Geneuphony, the illustrious J. J. de Virués y Spinola, not less conspicuous as a diplomatist than as a general officer, as a poet than as a learned man, one of the greatest metaphysicians of Spain, and over whose premature tomb his friends and admirers have for eight years shed many tears, found, after twenty years of almost incessant research, that only fact, on which all others depend. It will probably not be without interest and pleasure that our reader will here peruse a few extracts from that great man's own assertions, such as they may be found in his Preliminary Discourse, placed as an introduction to the Geneuphony. Thus he says: " My aim is to explain a simple " fact, coeval with Nature herself, whence it springs.

" This theory will remain unshaken. Contested or not for a " period, it will be brought to perfection in course of time, by suc- " cessive connoisseurs; and the fact which has dictated it, and " which has constantly been within the view of every practitioner, " will at length become manifest. The system of which it is com- " posed, and which will, in my opinion, do away with all the an- " cient theories, is grounded upon a discovery, or rather hypothesis, " perfectly novel: a desideratum, the accomplishment of which is " the fruit of the most unremitting researches. It strikes me that " this hypothesis, which is nothing less than that of a sole principle " applicable to every case, without exception, and which the great " masters, though unintentionally, have followed in all ages, is " destined to produce in the science of Music a revolution similar " to the one in Geography effected by our great Columbus. I do " not hesitate to affirm that the study of the science of harmony " need, in no case, exceed a month. The infallible effect of this " theory will be to lay before the pupil, at the first view,—1, where- " in consists all the art of every partition whatever; 2, that all this " art, with respect to harmony, lies in one and the same operation; " 3, that this operation is the very same which he has just learned. " The theory of music remained incomplete. This, although un- " known to many of the first composers of our age, was a truth " admitted by all the philosophers and the learned who had devoted " themselves to the great art, of which I now present the new ru- " diments. The perusal of their works, and the want of a principle " applicable to all cases, inspired me with a wish, even in my youth, " to achieve the discovery of this principle. I must, however, con- " fess that I viewed it at first in the light of another quadrature of " the circle, or of another philosopher's stone. With this object in " view, I employed all the leisure moments of my early education " in reading above forty thousand folio pages on musical harmony. " Amongst all these, I did not find a single treatise exempt from " serious errors, and in which the want of a universal principle was " not sensibly felt. Never losing sight of this idea, I continued, for " many years afterwards, to apply every respite occasionally allowed " to me by the various duties of my public career, to that study " and meditation of which I have spoken at the opening of this " discourse, and which, from their very nature, could have no fixed " or regular design. Still I never relinquished my endeavours " until I arrived, not only at the knowledge of the spring in nature, " which constitutes and regulates harmony, but at the reduction of " this fact to a universal principle. This principle I applied to

" every known law, and to the erection of a system reared upon " this single and general principle, and so complete that it rendered " useless all the ancient theories, destroyed all the ancient excep- " tions, itself admitting of none, and answered, as it were, before " hand, and from its own power, every species of objection. It is " then the learned men of ability who have immortalized themselves " by their writings in music, who supply me with the necessary " courage for such an undertaking. All of them, I repeat, have " acknowledged the want of a universal principle, or, at least, of a " single fact, by which every other might be regulated.

" Harmony is the rhyme of music, and the musical effects are " its poetry. Poetry is, without doubt, to be found among the " ancient masters, musicians as well as poets; but in what respect " are ancient composers to be preferred, or even compared, to the " modern?"

This learned author has in his Geneuphony revealed and unfolded the true and secret spring of nature as to what spontaneously produces, constitutes, and regulates harmony: and from the Geneuphony, from the manuscript notes and additions marginally written by the General's own hand, I have extracted the fundamental doctrine on which is grounded the work which I now offer to the British public. That secret of nature, discovered by General de Virués, became the sole principle to which he reduced all the known laws in music, and upon which he raised a system so well digested and co-ordinated in all its bearings, that it admits of no contradictions, exceptions, nor licences; that the least flaw cannot be found in it. The want of a sole principle from which the pupil could deduce and draw all the necessary rules, and to which he could resort as to an infallible guide in unforeseen cases, was the real cause of most works, among those of the authors above-named, being so very voluminous, and so much the more difficult to understand and to fix in the mind, as they speak only to the memory. Buhter, Richter, and some others, recommend the pupil to protract during six months the study of such a lesson, and for a whole year that of such another. It has, therefore, been attempted, up to the present day, to teach harmony and counterpoint just the same as one would endeavour to teach arithmetical multiplication by means of a thick folio of ready-made reckonings. In this state of the musical science, several authors among those with whose names this Introduction begins, did not hesitate gravely to prohibit all kinds of innovations; but it is evident that such a mistaken notion could only arise from the mists of ambiguity.

The principle has been confounded with the rules. The principle is euphony, and euphony is that which is pleasing to the ear, as fragrance is that which is agreeable to the smell; in other words, *precadence* and *cadence*. Woe to the luckless wight who shall dare to infringe this law! Still, this law is not a rule. Every rule invented without a perfect understanding of the fundamental principle may be inapplicable in various cases, because it could not have been established except for the attainment of an end which does not result from this principle. This is proved, among other systems, by that of resonance and a fundamental bass, which, in the last century, was mathematically demonstrated to be as false, as it would, poetically, be absurd to say that rhyme is the producer of poetry. Such systems must necessarily give introduction to licences. A universal law admits of none. Now, the law of the Geneuphony or Polytonogamism is a universal one.

The fundamental principle of the great harmonist, Mr. Catel, whose work is adopted for the teaching of harmony and counterpoint in most of the European conservatories, is, that *every dissonance is the retardation of the consonance into which it does of itself resolve*. From this simple and correct principle he draws an incorrect consequence, as from it he divides harmony into two sorts; viz. *simple* and *compound*. The Geneuphony has proved that there is no compound harmony; and there can be none.

Polytonogamism, or the Geneuphony, presents a system entirely novel, a method totally different from any hitherto followed: it strikes out an untrodden path, and a new musical world bursts upon our sight. The author of the present Geneuphonic Grammar, who writes this Introduction under his signature, feels confident that this new theory will replace every other; and he looks upon the immense pile of ancient theories as nothing but a useless heap. All the nomenclature of chords, of intervals, of inversions, mutations, and substitutions; all those evolutions of harmony and cadences, all that diversity of relations, movements, transformations, temperaments, &c. &c. are nothing but vain and superfluous distinctions and classifications. This Babel of confusion, this crowd of rules, this mass of intricate and changeable combinations are decayed, overthrown, and superseded. A few pages will now suffice to raise the beginner from the youthful student to the master of harmony.

Polytonogamism is presented in this work as a simple hypothesis; but, in fact, as an hypothesis which explains everything in music, which reveals every thing that all the other systems have been hitherto insufficient to unfold, which defines and renders clear

every thing left by them vague and obscure, and finally, which supplies every thing pronounced to be wanting by the eminent professors and philosophers; at the same time, it neither destroys nor contradicts a single fact approved of by the ear, or rendered sacred by the ancient rules. It will leave all the ancient theories at an immeasurable distance, and eventually banish them from the regions of harmony. If it does not communicate the talent which produces thrilling melodies, it will at least impart that knowledge which accumulates chords with propriety, which forms a good master harmonist; renders its possessors the enlightened judges of the most boasted works, and enables them to write easily under any melody a complete, correct, and harmonious score. No one can invent new melodies without that genius with which God endows but the few; the art of beautifully harmonizing them this volume will bestow on every one.

To prove the infallibility of the new theory, the author of the *Original and Condensed Grammar* has followed and carried into execution the plan, not less ingenious than convincing, adopted by the author of the Geneuphony. It consists of making, by means of analysis and synthesis, the application of the universal Geneuphonic principle the only guide and the sole mould of every chant, either single or multiple, to various examples of all cases, rules, and even licences, taken from the works of the great masters, and headed with their names; examples to be refused by no one, as the works which contain them are in the hands of all amateurs. Now it evidently results from this application, that, with the aid of that sole Geneuphonic principle, which is understood in a few hours, and the complete use of which can be known either in a few days or in a few weeks, any one will be enabled to obtain the same results, to produce the same effects, which those great masters and the most classical composers have neither obtained nor produced before they had grown grey in the study of voluminous treatises, and principally in that of partitions.

As a preparatory step to prove the existence of motion, this theory begins by making its followers walk. The better to put it within the reach of every class of readers, the writer of the present Introduction has caused it to be preceded by a short, clear, and complete grammar of elementary music; so that, with this volume only, any one may progress from the knowledge of the names of the notes to the capability of composing a complete score for a grand orchestra. To attain this end, the present work suffices.

The first thing the reader ought to do is to prepossess his mind

with the idea that he will obtain the result which I promise to him in the foregoing lines: this exertion of confidence on his part is almost as necessary to his success as the theory itself. I do therefore entreat him to forget all the arguments which he may have heard from others, or those which may have occurred to his mind, against the possibility of such a result. When the illustrious author of the Geneuphony made the same entreaty to both masters and pupils of the Royal Conservatory at Madrid, he spoke thus: "I "solicit this sacrifice at your hands for three days only, and this "for your own conviction and interest. If, at the end of that time, "you do not feel convinced of the superiority of the Geneuphonic "System by the sight of the immensity of the difficulties (but "lately almost insurmountable) which will be dispelled as it were "in a moment, I am willing to be looked upon, if not as an im-"postor, at least as an ignorant being, labouring for a long course "of years under the deceptive influence of his own illusions." The better to induce the incredulous to make the experiment which I propose to them, I declare:

1st. That, in what they are now going to read, they will find none of those technical terms used in the ancient theories.

2nd. That, when they shall have finished the study of the first twenty-two chapters of the Geneuphonic Grammar, they will be capable of reading, not only with fluency, but with the greatest satisfaction, not merely the rest of this volume, and the criticism which it may call forth, but also those very ancient theories which few have had courage to peruse to the end, and which no scholar has ever been able to commit to memory. The Original and Condensed Geneuphonic Grammar, which I now deliver up to the indulgence of the British Public and of the musical world at large, renders it manifest that Polytonogamism is the elysium of hearing; in which elysium all that before remained hidden and wanting is found on entering its gates. The immortal author of the *Geneuphony*, however, has not invented in music more than the great Columbus invented in geography, or the learned Herschel in astronomy. Polytonogamism, Euphony, and its only law, were in nature; as America was on our globe, as all planets are in the universe. Now, all that exists in nature God has invented and made,—man discovers.

With the last sentence I thought I should conclude this Introduction, the foregoing part of which was couched on paper before I had written page 221 of this volume, in which I cast a retrospective glance on the part which each of its two authors

has contributed to its formation. Now that the whole work is completed; fully conscious of the inferiority of my contribution, both in quantity and quality, I should blush to avail myself of the deeply lamented circumstance of my illustrious Friend and Master resting in the tomb, or rather being crowned with immortal honor, to let the musical world believe (supposing that the Geneuphonic Grammar should be found to deserve and obtain universal acceptance) that I have, in its production, an equal share with his. Far be it from me to harbour such a thought! My feeling is, that had I so acted towards a friend alive, I should have been guilty; towards a deceased one, criminal. Besides, I am not, when I make use of borrowed goods, in the habit of concealing them, either in philology or literature, any more than in music. I should be ashamed to adorn myself with peacocks' feathers; and in returning to Cæsar that which belongs to Cæsar, nothing is done but justice. In order, therefore, to complete the distribution begun at the bottom of the above-mentioned page 221, I think that the most honorable course is to candidly point out that which, in the present volume, belongs to the author of the Geneuphony, General de Virués, and that which has been added to it by the humble Author of the present work. The latter, besides the Elements and the Prolegomena, has entirely written the Chapters III, IV, XXXIV, of the first Treatise; and XI, XII, and XIII, of the second. The Chapters V, VII, VIII, IX, XVIII, XX, XXVIII, XXIX, and XXXIII, of the Practical Treatise; and Chapters I, II, V, VII, VIII, IX, X, and XIV, of the Theoretical Treatise; are the composition and the style of both equally. All the remaining chapters in the two Treatises are the work of the former alone.

The last duty to be discharged in this preface is to warn the reader, that, when he has studied § 40 of Chapter VIII, page 135, the Golden Rule and the Syncoped Counterpoint in Chapter X and following, from page 151 to 202, he will do well to compare his translation into musical writing of the examples given in letters, with those same examples, which he will find in Chapter IX of the Theoretical Treatise.

I beg to add, that the developments gradually given to the present Geneuphonic Grammar have rendered null and void the promise made at page 205: the performance of such a promise would be quite useless to musical science, as well as to its professors and students.

Finally, I say, with regard to the request respectfully addressed, at page 279, to masters and to learned men in general, that any

private communications with which they may think proper to honor me, will safely reach my hands, if directed for me, to the care of Messrs. Longman and Co. or Messrs. Cramer, Beale, and Chappell. I indulge, however, in the hope of finding, in such communications, as far, at least, as the Discoverer of the Geneuphonic Theory may be concerned, the expression of a sympathetic admiration for his ingenuity, his talents, and his genius: as to the humble labours of the undersigned, he only asks the favour of words of indulgence and encouragement, the sole reward to which he aspires for his unremitted efforts both to shorten and facilitate the acquirement of the indispensable knowledge, not only to create melodies or compose correct harmonizations, but also better to enjoy the ineffable pleasures lavished on the civilized world by the most impressive and the most overpowering of the fine arts.

A. CHALUZ DE VERNEVIL.

London: May 2, 1849.

PREFACE TO THE ELEMENTS OF MUSIC.

Our first intention was to publish only the Practical and Theoretical Treatises of this work, preceded by the *Prolegomena;* viz. the complete Rudiments of Harmony, Counterpoint, and Musical Composition; but, in order that this volume may be sufficient to make every one, even a perfect stranger to music, understand the science of which it treats, from the names of the notes to the rules for the composition of a score for a grand orchestra, we have deemed it requisite to give a succinct exposition of the general elements of music in a few elementary and preparatory chapters. As often as we have given to some of the ancient denominations at present in use a new signification, we have corrected or completed their meaning by explaining the novel one according to the Geneuphonic theory. The perusal of these Elements, though indispensable to such as are utterly ignorant of music, is quite useless to those who have read the most simple solfas.

As the following Elements are written in conformity with the principles hitherto generally received, we must warn the reader that several of the rules laid down in Chapter VI are in complete opposition to the essence and simplicity of the Geneuphonic doctrine: he will peruse, and he will judge.

ERRATA.

Page 9, line 10, *for* phrases, *read* period.
—— 10, *for* General table or measure, *read* General table of measure.
—— 42, in the last line, *for* reduced, *read* deduced.
—— 47, line 7, *for* the sixth, *read* its sixth, that.
—— 55, line 22, *for* three sorts of sounds, *read* three sorts of seconds.
—— 86, line 17, *for* Do, Mi, Sol, *read* Do, Sol, Mi, Sol.
—— 11[illegible], line 9, *for* from observations, *read* from the observations.
—— 11[illegible], line 36, *for* invariably, *read* invariable.
—— 112, line 7, *for* from observation, *read* from the observation.
—— 148, last line, *dele the words* of the present treatise.
—— 158, line 18, *for* the tenor then, *read* the counter-tenor.
—— 193, line 37, *for* major third, *read* minor third.
—— 208, line 20, *for* modulating the mode, *read* modulating within the mode.
—— 214, line 3, 34, and 36, *for* double bar, *read* doubled bar.
—— 251, line 4, *for* following, *read* foregoing.
—— 254, line 23, *for* polytogammism, *read* polytonogamism.
—— 276, line 7, *for* extreme sharp or tritone, *read* extreme sharp fourth or tritone.
—— 282, line 23, *for* the Keys of La and Do, *read* the Keys of Fa and Do.
—— 345, line 31, *for* the crossing of parts is not, *read* the crossing of parts is, if not.
—— 354, line 3, *for* dissonance, *read* resonance.
—— 432, line 30, *for* arsis, *read* thesis.
—— 432, line 33, *for* thesis, *read* arsis.

ELEMENTS OF MUSIC.

CHAPTER I.

THE STAVE, NOTES, SCALES, CLEFS, &c.

§ 1.—*Staff.*

THE stave, or staff, consists of the union of five lines drawn upon paper, the first of which is the lowest, and the fifth the highest; to these are added additional ones, called ledger lines, both lower and higher, for the grave and acute notes.

§ 2.—*Notes.*

The notes serve to represent the sounds; they are seven, which are named as under:—

La	Si	Do*	Ré	Mi	Fa	Sol
A†	B	C	D	E	F	G

Almire. Befaemi. Cesolfaut. Delasolre. Elabemi. Fefabeut. Gesolreut‡.

---

* This note was called *ut;* the Conservatory of Naples changed it into Do; a softer and more sonorous syllable, and at present universally adopted.

† We have placed the notes in this order, because when the Greeks adopted their letters to represent the notes of music, the system had not yet received the literal scale of *ut*. The actual names and order of the notes are the first syllables of each verse of the first strophe of St. John the Baptist's hymn. Guido, a Benedictine of Arezzo, in the eleventh century, conceived the idea of giving those syllables as names to the first six notes. Angelo Berardi included them in the following verse:—"*Ut Relevet Miserum Fatum, Solitosque Labores.*" It was not until several centuries afterwards that the *Si* was invented, and added to the scale of Guido.

‡ These multiple denominations, which the primitive constitution of the system had originated, in the first age of Music, have been reformed since all notation became naturally solfaed: that arose from and after the invention of the *Si*, before which it was necessary to name the seventh, to be changing continually the names of the other notes, and to give different names to each of them.

These seven notes are placed on the different lines of the stave and the spaces which they form ; of these the lowest is the first, and the highest the fourth. The lines of the stave with their spaces are, it might be said, to musical writing what the point is to the Hebrew language.

§ 3.—*Scales.*

To the seven notes united is given the name of heptachord or scale, and every scale takes its particular name from the note by which it commences.

The regular extent of melody is that of the three scales, which are called Grave or Bass, Middle or Tenor, and Acute or Treble.

§ 4.—*Clefs.*

The different characters of voices and instruments have given rise to the invention of different clefs, or cliffs. The clefs, therefore, serve to shew the relation which ought to be preserved between the instruments and voices in the method of writing their several scales.

There are seven clefs, that is, as many as there are notes. They are named, clef of *Fa* (F) upon the third and fourth line ; clefs of *Do* (C) upon the first, the second, the third, and the fourth lines ; the clef of *Sol* (G) upon the second.

Of these seven clefs three are fundamental. The clef of *Fa* (F) upon the fourth line, which serves for the bass voices and instruments ; the clef of *Do* (C) upon the fourth line, which belongs to the Tenor, and generally to every voice and instrument of the tenor gamut ; lastly, that of *Sol* (G) which is the clef of the violin and of all treble instruments.

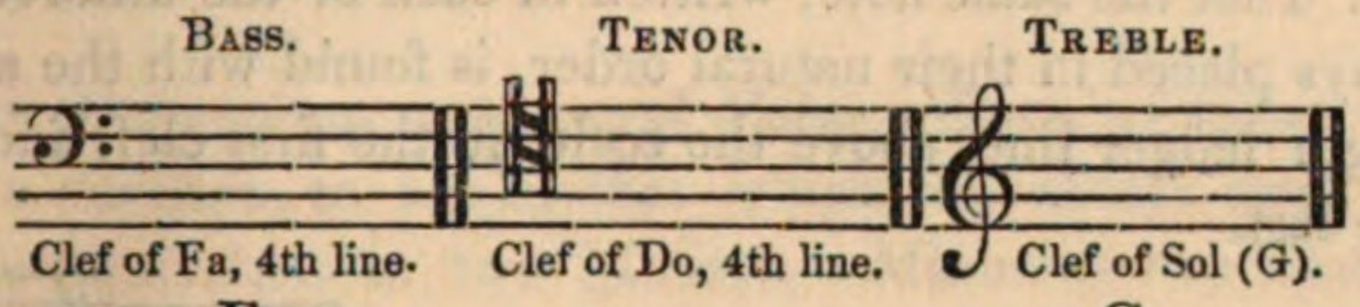
The clef of *Fa* (F) upon the third line is also called the clef of *Baritono ;* the clef of *Do* (C) upon the same line, the clef of *Alto* or *Counter-tenor ;* the clef of *Do* (C) upon the second line, clef of *Mezzo-soprano ;* and lastly, that of *Do* (C) upon the first line, the clef of *Soprano.*

The object of this diversity of clefs is the capability of writing on the stave, with the aid of a very small number of added or ledger lines, the three octaves, to which the ordinary extent of the scale is limited.

Observe, however, that these complex names contain the notes 1 4 5 of that key the tonic of which is each complex name ; and see the table of heptachords, with the observations and rules annexed to it. Since the invention of the note *Si*, musical writers gave to the note *Elami* or *Elabemi*, the name Elamisi ; and to the note *Fefaut* or *Fefabeut*, that of *Fefautsi*

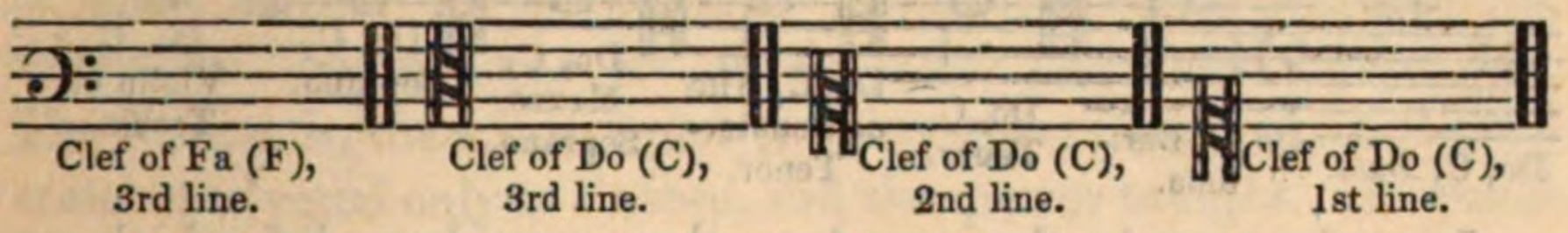
It follows, that in each clef the notes take their name from that of the denominating note of the clef; that is to say, from the position which it occupies upon the stave. Thus, for example, in the clef of *Fa* (F) upon the fourth line, a designation, which of itself denotes that in this clef the *Fa* (F) is placed upon the fourth line), the *Sol* (G) will be in the fourth space, and the *Mi* (E) in the third; the *La* (A) will be upon the fifth line, and the *Re* (D) upon the third: thus the note which is a *Fa* (F) to the clef of *Fa* (F) upon the fourth line is a *Do* (C) to the clef of *Do* (C) upon the same line, and a *Re* (D) to the clef of *Sol* (G).

The clefs are marked as follows:—

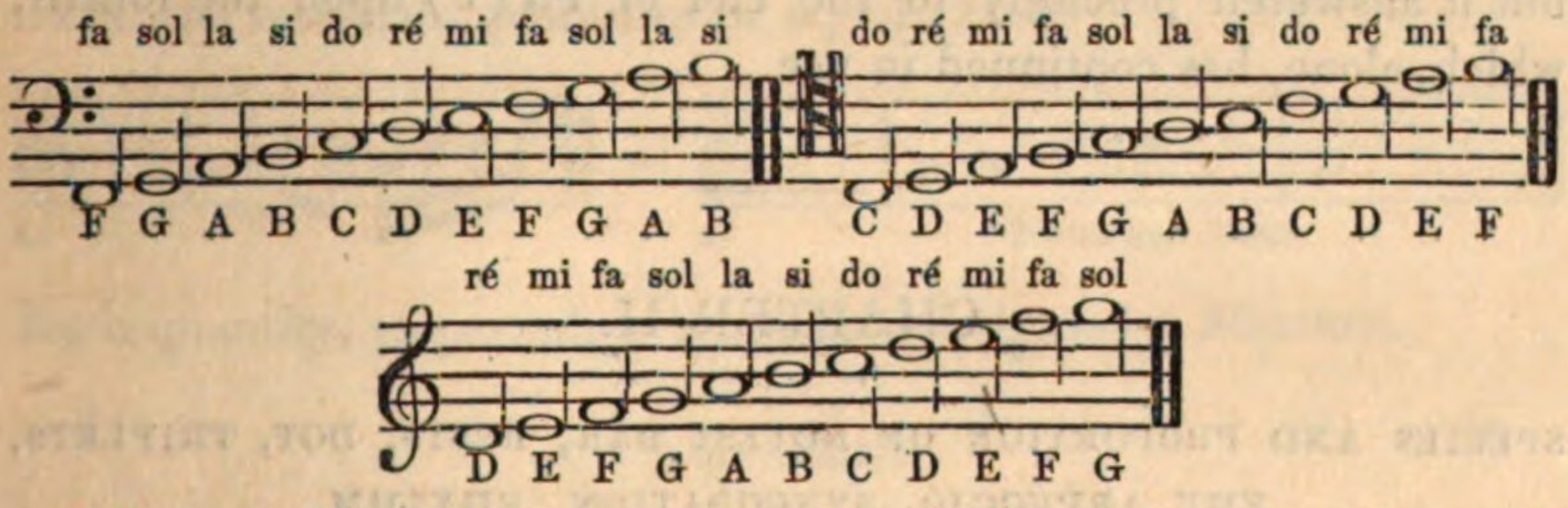


F G

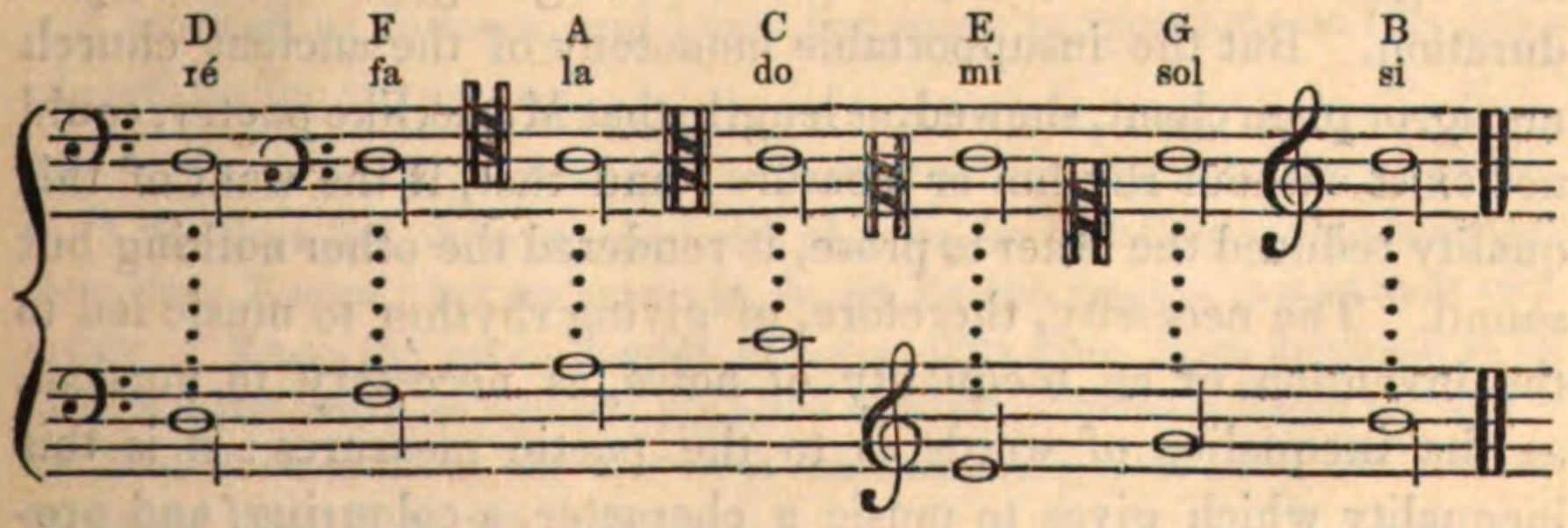
SECONDARY CLEFS.



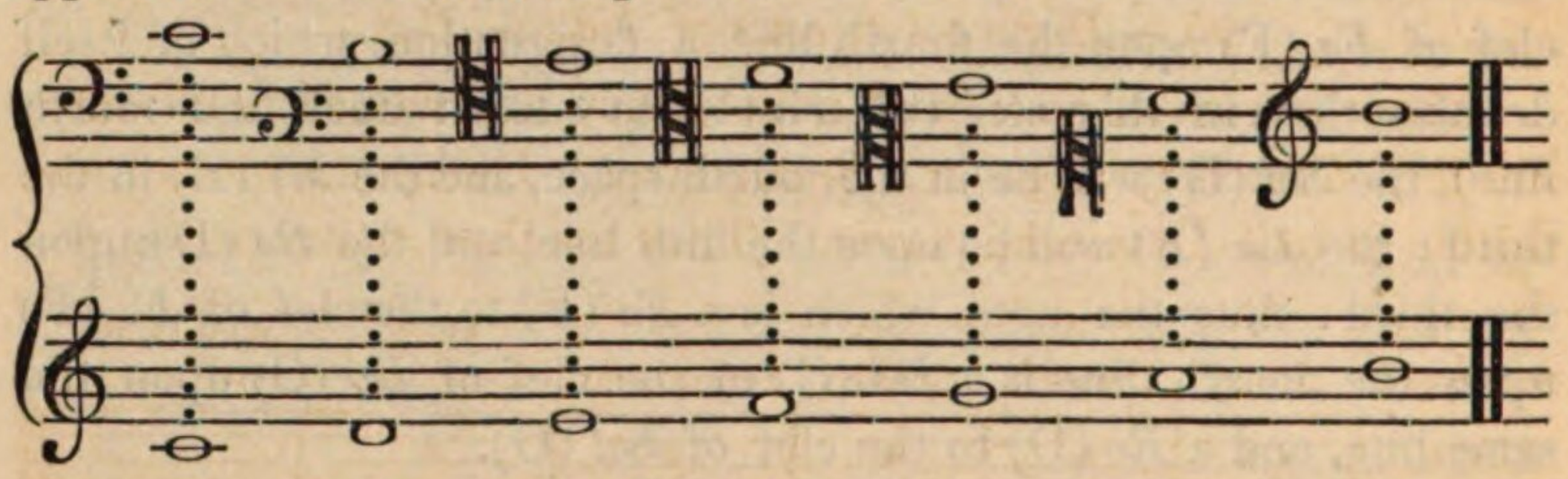
The seven notes, then, in the three fundamental clefs have their position defined as under:



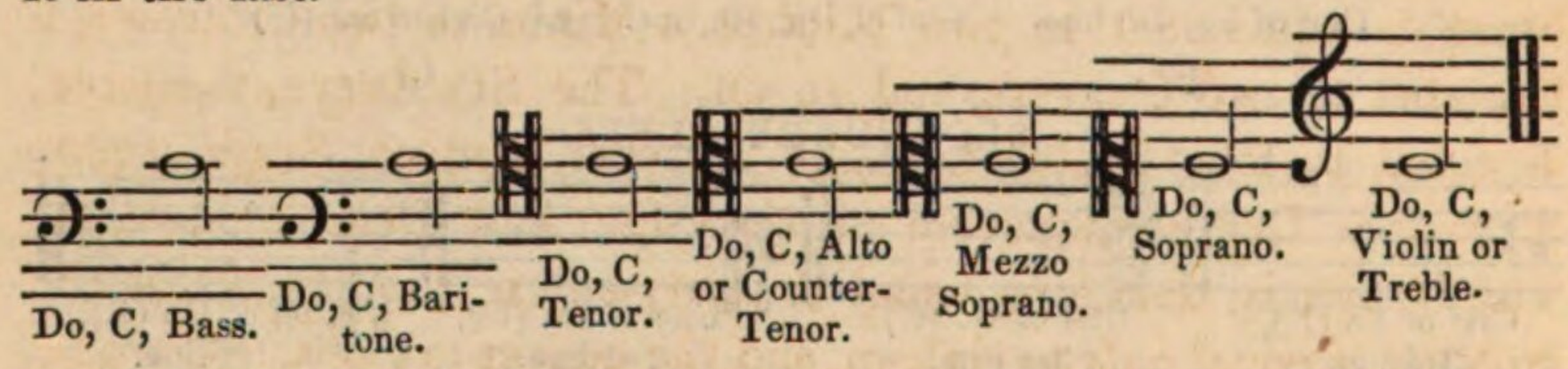
The relation of clefs to one another is that of thirds; whence it follows—1st. That the notes placed upon the same line with different clefs, arranged according to their natural order, form a scale of thirds.



2dly. That, if every note of a rising scale be written in all the different clefs in their natural order, their union will present the appearance of a descending scale.



3dly. That the same note, written in each of the different clefs, but always placed in their natural order, is found with the addition of a single ledger line, above the scale in the first clef, and below it in the last.



In ancient music they used another secondary clef, which we have not mentioned: it was the clef of *Sol* (G) upon the first line; but it answered precisely to the clef of *Fa* (F) upon the fourth, which, alone, has continued in use.

CHAPTER II.

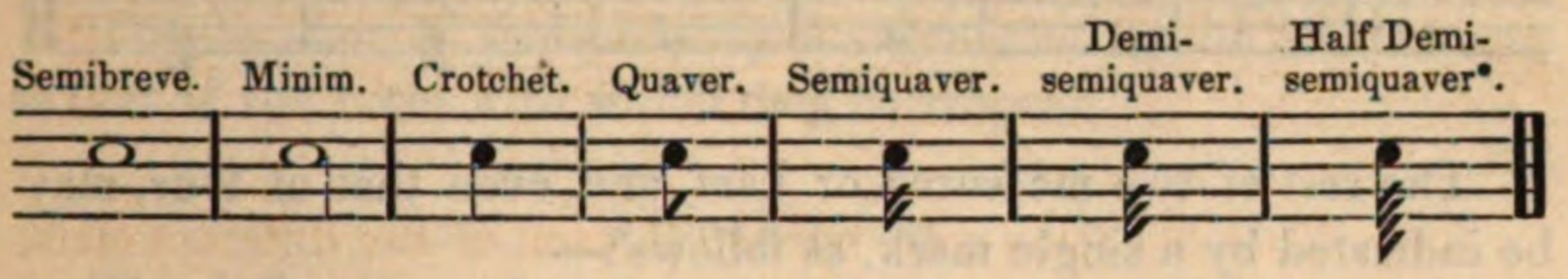
SPECIES AND PROPORTION OF NOTES: BAR, RESTS, DOT, TRIPLETS, THE ARPEGGIO, SYNCOPATION, RHYTHM.

After their birth, the youth and improvement of the arts and sciences are gradually progressive. Music, for a long time, was nothing more than a series, more or less fatiguing, of notes of equal duration. But the insupportable monotony of the ancient church music, or plain chant, shewed, at length, that Music, like poetry, could not exist without rhythm or measure; and that, if the want of this quality reduced the latter to prose, it rendered the other nothing but sound. The necessity, therefore, of giving rhythm to music led to the invention of an inequality of notes, as necessary to musical, as the inequality of words is to the poetic measures: it is this inequality which gives to music a character, a colouring, and pro-

duces that multitude of musical effects, more various to the ear than are the patterns of an ever-revolving kaleidoscope to the eye.

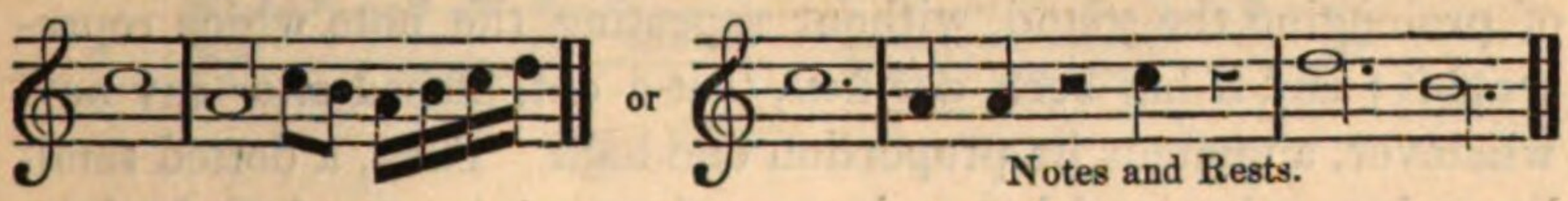
§ 5.—*Different Species of Notes—Bars.*

There are seven species of notes; they are named Semibreve, Minim, Crotchet, Quaver, Semiquaver, Demisemiquaver, and double or half Demisemiquaver. They are thus represented:



Their Proportions, or temporal Value.—Each of these notes is equal, in duration, to two of that which follows it: thus a Semibreve is equivalent to two Minims, a Minim to two Crotchets, a Crotchet to two Quavers, and so on. The Semibreve, therefore, is equal to four Crotchets, eight Quavers, sixteen Semiquavers, thirty-two Demisemiquavers or sixty-four half Demisemiquavers. The Minim is, therefore, equal to thirty-two of the last, whilst the crotchet is equal only to sixteen, and the quaver to eight. It would be useless to enlarge upon this head.

Bar.—The Bar is a character the use of which is to divide the notes and rests into quantities of equal value.



Notes and Rests.

Each quantity, so parted, is by some also termed a *Measure*.

§ 6.—*Rests.*

As it happens that a detached melody requires interruption, or one part must pause while the others continue, signs have been invented to mark a rest equal to the duration of each species of notes. There are, therefore, seven species of Rests, which are named and marked as follows, and have the same proportions as the notes placed under them:—

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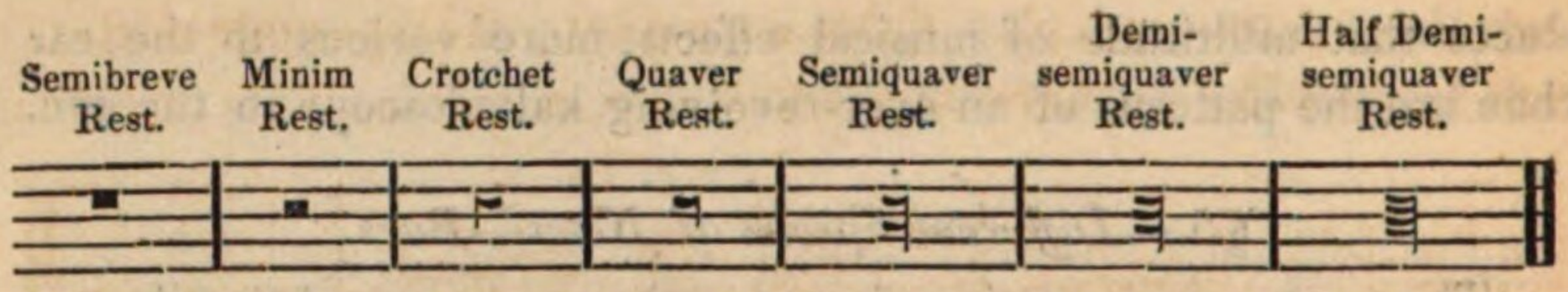
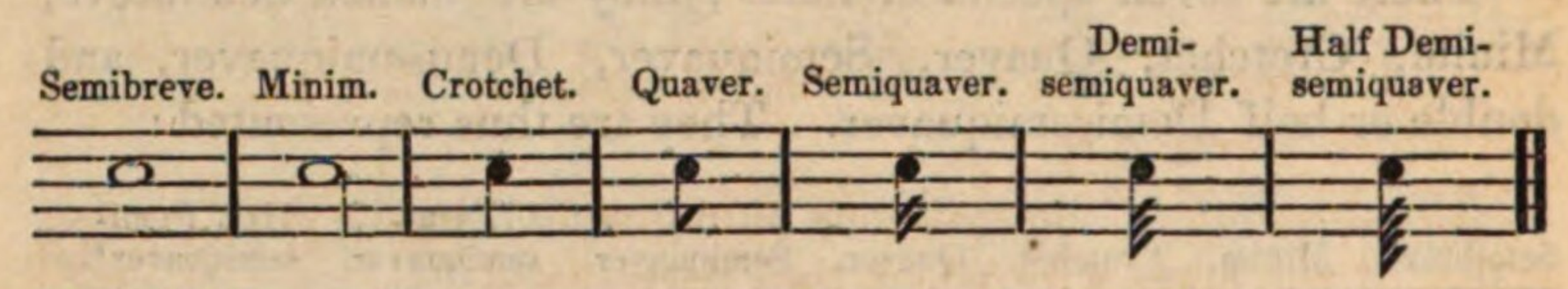
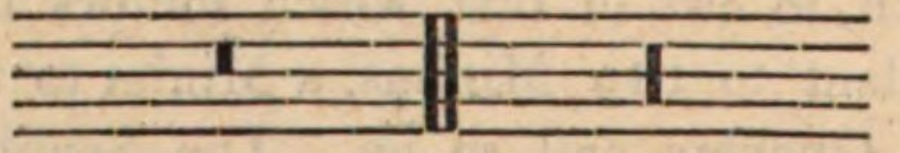
* We have left these seven species of notes, because they are in general use throughout Europe; but we must add, for our English readers, that in their rudiments of Music, the seven species of notes differ from these, inasmuch as the longest is the Breve, so figured ( ), the duration of which is double the time of the Semibreve, and that the shortest is the Demisemiquaver; the half Demisemiquaver being of no use in England.





The rest of two measures or bars, and even that of four, may be indicated by a single mark, as follows:—

Rests of Two Bars. Rests of Four Bars.

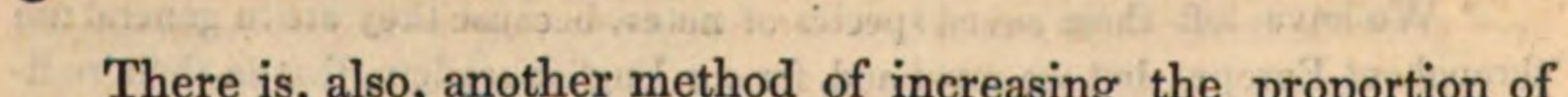


To make a rest last longer than four bars, it is only necessary to indicate by a figure over the stave, marked for one or several *four-bar Rests*, and others, the number of bars it ought to continue.

§ 7.—*Dot and Double Dot.*

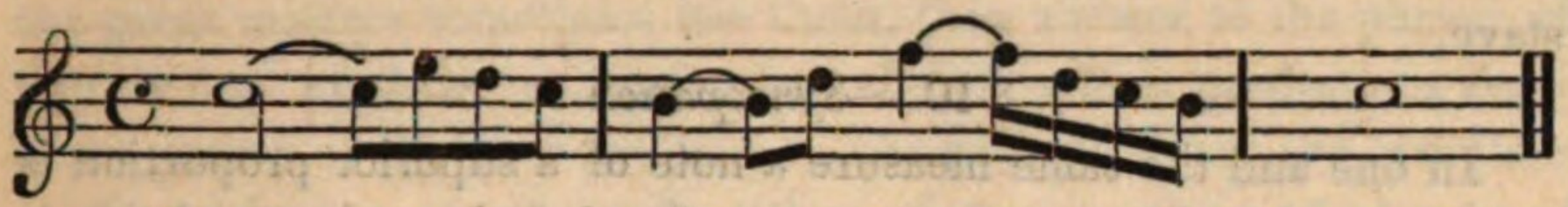
The Dot and Double Dot have been resorted to for the purpose of prolonging the sound, without repeating the note which represents it; and it has been decided, that a dot, placed after any note whatever, augments its proportion one half. Thus, a dotted semibreve is equal to, and lasts as long as, three minims; a dotted minim is equal to, and lasts as long as, three crotchets; a dotted crotchet as long a three quavers, etc. etc.

When two dots follow a note, the second dot is half the length of the first; that is to say, the double-dotted note becomes longer by three-fourths of its natural duration. Then, a minim with two dots is equal to a minim, a crotchet, and a quaver, and so on. Exmple:



There is, also, another method of increasing the proportion of notes, which is done by connecting a note of a higher with the same note, but of a lower proportion, by the mark of a curve line, called a *Ligature* or *Tie*. The first is thus augmented by the whole

duration of the second. Three examples of this augmentation will be found in the following sketch:

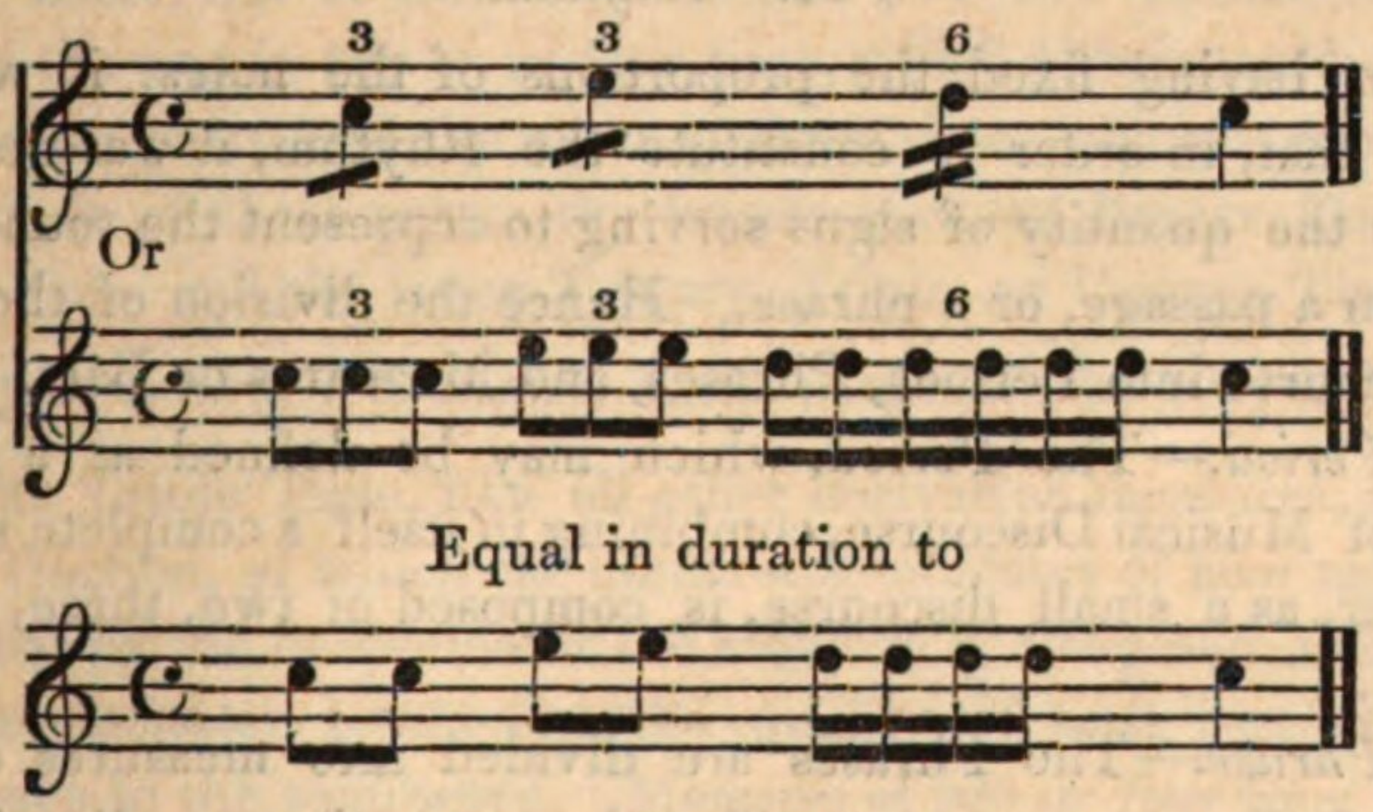


where the second tied to the first is observed to act as a dot to that which precedes it.

The duration of the rests may be augmented by the dot the same as that of the notes with which they correspond.

§ 8.—*Triplets.*

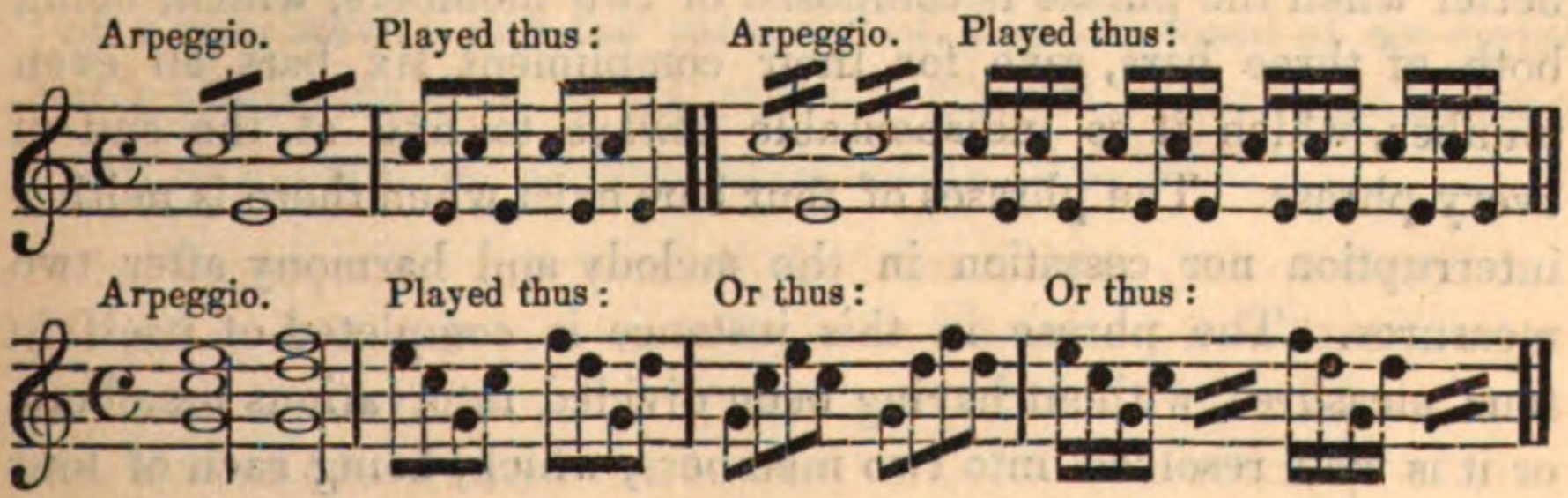
The different species of notes always preserve their proper proportion. Nevertheless, instances sometimes occur in which it is required to pass over three quavers, or over three other notes still shorter, as quickly as over two only of the proper time; in which case three are written in the place of two, and six in the place of four. These are called *Triplets*, or *Double Triplets*, and are marked as follows:



Equal in duration to

§9.—*Abbreviations.*

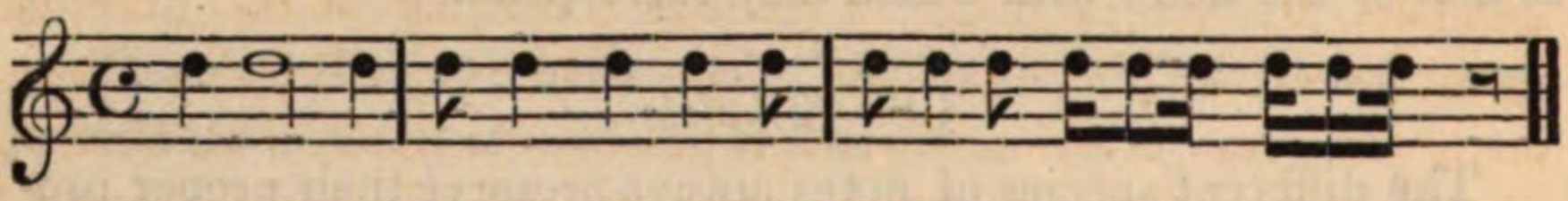
Certain passages or *chords*, called *Arpeggios*, are written in an abridged manner when the notes of which they are composed, either higher or lower, revert alternately or regularly in the bar; as, for example:



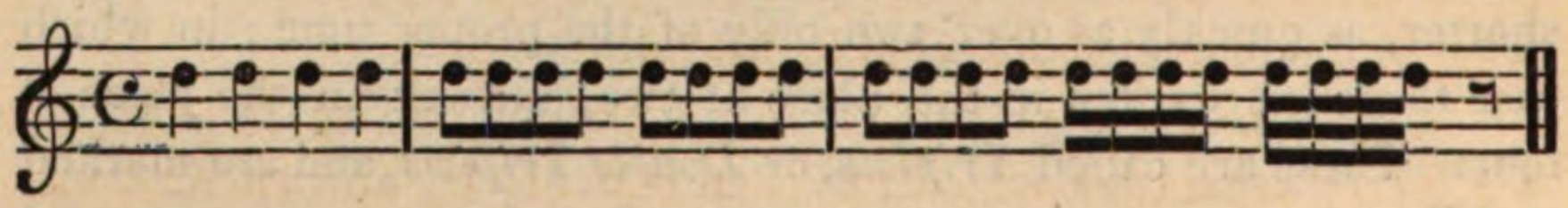
It is only requisite to be careful in marking the abbreviation with the word *Arpeggio*, which must be written on the top of the stave.

§ 10. —*Syncopation.*

In one and the same measure a note of a superior proportion is sometimes placed between two notes of an inferior value, and this is called *Syncopation*. The object is to form vibrations contrary to the natural movement of the measure in performing notes at counter time. It is thus exemplified:



It is evident that the proportion of each of these three measures is the same as that of each of the three following:



§ 11.—*Rhythm.*

After having fixed the proportions of the notes, it was discovered that, in order to constitute the Rhythm, it was necessary to settle the quantity of signs serving to represent the sounds contained in a passage, or a phrase. Hence the division of the Musical Discourse into Periods, Phrases, and Measures or Bars.

1. *Period.*—The Period, which may be defined as a limited extent of Musical Discourse, combining in itself a complete subject, or rather, as a small discourse, is composed of two, three, or four phrases.

2. *Phrase.*—The Phrases are divided into measures or bars. Those of two are very rare. Two bars constitute ordinarily only one member of a phrase, and two members at least are required to form a complete phrase. The complete phrases of three bars are but little used in the measures of common time: they are practised in the measures of triple time, and for particular effects; but it is better when the phrase is composed of two members, which, being both of three bars, give for their compliment six bars, an even number, which it is indispensable always to find at the end of every phrase. The phrases of four bars exist when there is neither interruption nor cessation in the melody and harmony after two measures. The phrase in this instance is completed of itself in four measures, without having been divided into various members, or it is well resolved into two members, which, being each of four

bars, form a complete phrase which has eight. The phrases of five bars are discontinued, and ought to be looked upon as licences. If the great masters sometimes use them, they answer to the phrase of five by one of three, or by another of five, which produces a complete phrase of eight or ten bars. The phrases of six are complete in themselves, or compounds either of *two* members of phrases of *three bars* each, in the pieces in triple time, or of *three* members of phrases of *two bars* each in the pieces in common time. There are no phrases of seven. Those of eight and more, always of even numbers, are complements of ~~phrases~~ consisting of the different members of the phrases of any piece whatever. The first phrase ought, on every occasion where it is possible, to stand as an emblem of the others. They ought, therefore, reciprocally, to be composed of a similar number of bars, and to correspond as much as possible by a similar number of notes, and by their proportion. This is what is denominated Rhythm in Music.

3. *Measures.*—By Measure is understood, as we have seen in § 5, every separation which forms an equality in musical discourse, not of notes, but of duration. There are two fundamental measures; the one in *two* or in *four* time, which is composed of two or four equal parts, and the other in three time, which is composed of only three of these parts: the former is called Binary, Common, or Even time, and the latter Trinary, Triple, or Uneven Time. The Binary Measure, or Common Time, is marked by a C, or by a ¢, and the Triple Time, like all other derivative measures, is written like a fraction, of which the numerator indicates of how many notes signified by the denominator the measure is composed, and of which the denominator points out the quality of each part or note by reference to the semibreve. Measure of *two* or *four* time has eight derivatives, and measure of *three* time has seven. The following table will show how many notes of each sort are admitted into each of the different measures. It will be seen that the measure of $\frac{2}{4}$, for example, is composed of two-fourths of a semibreve, i. e. of two crotchets; that the measure of $\frac{3}{4}$ is composed of three-fourths of a semibreve; and the measure of $\frac{6}{8}$ is composed of six-eighths of a semibreve, i. e. of six quavers, &c. &c. The only measures now in general use are distinguished by an asterisk.

General Table, of Measure, or Time.

		𝅝	𝅗𝅥	♩	♪	𝅘𝅥𝅯	𝅘𝅥𝅰	𝅘𝅥𝅱
Fundamental, Common, Even or Binary Measure.	𝄵	1	2	4	8	16	32	64 *
Measures derived from the Binary, Common, or Even.	2/4		1	2	4	8	16	32 *
	6/4		3	6	12	24	48	96
	12/4	3	6	12	24	48	96	192
	6/8			3	6	12	24	48 *
	12/8		3	6	12	24	48	96 *
	16/8	2	4	8	16	32	64	128
	6/16				3	6	12	24
	12/16			3	6	12	24	48

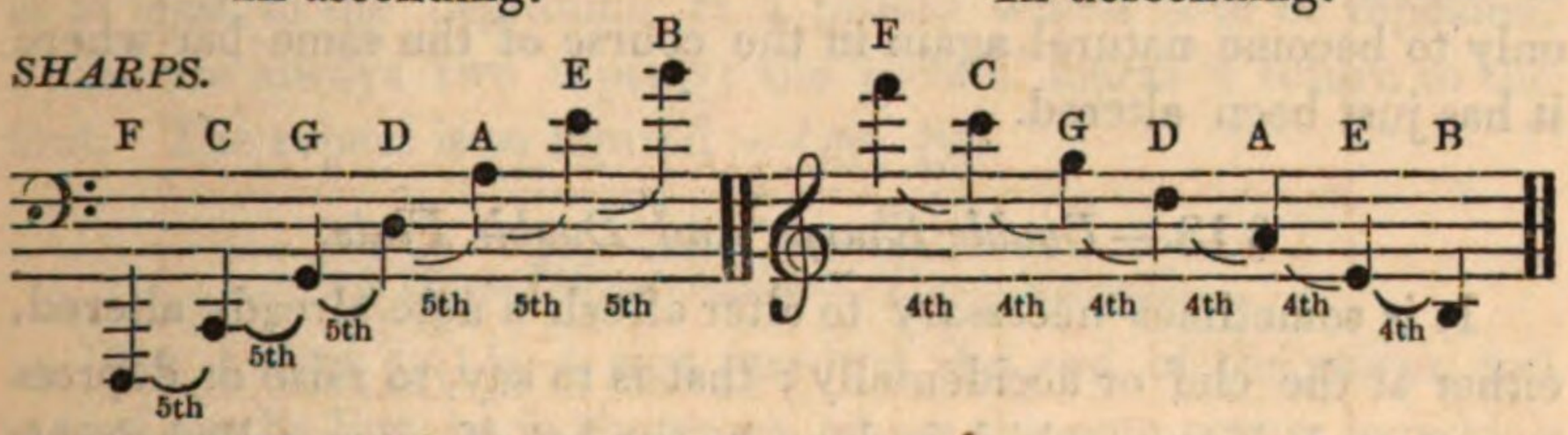
		𝅝	𝅗𝅥	♩	♪	𝅘𝅥𝅯	𝅘𝅥𝅰	𝅘𝅥𝅱
Fundamental, Triple, Uneven or Trinary Measure.	3/4			3	6	12	24	48 *
Measures derived from the Trinary, Triple or Uneven.	3/1	3	6	12	24	48	96	192
	3/2		3	6	12	24	48	96
	9/4			9	18	36	72	144
	3/8				3	6	12	24 *
	9/8				9	18	36	72
	3/16					3	6	12

CHAPTER III.

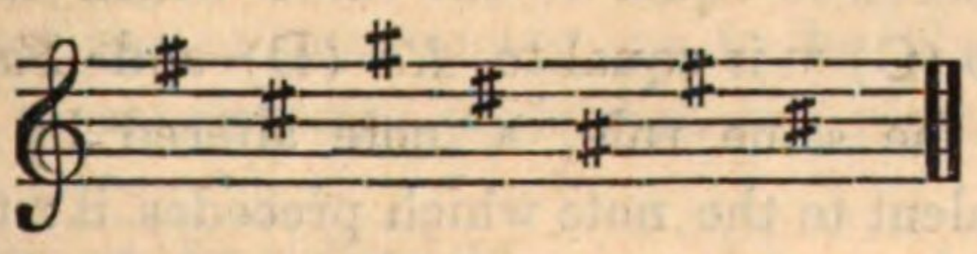
CHROMATIC SIGNS—MUSICAL SIGNS AND EMBELLISHMENTS—MOVEMENT.

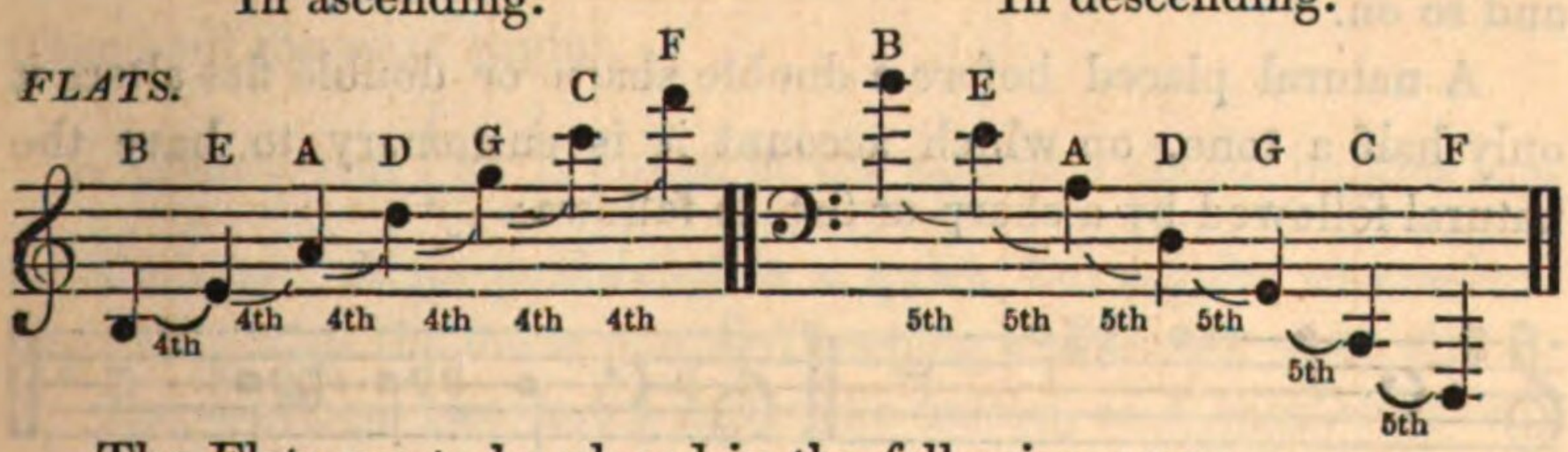
§ 12.—*Chromatic Signs, or Sharps and Flats.*

Notes may be raised or lowered half a tone. The Sign which raises them is called a *Sharp*, and that which lowers them, a *Flat*. Sharps, which are marked thus (♯), are placed from fifth to fifth in ascending, and from fourth to fourth in descending; and the flats, which have the figure of a ♭, are, on the contrary, placed from fourth to fourth in ascending, and from fifth to fifth in descending, as it is seen in the following example.

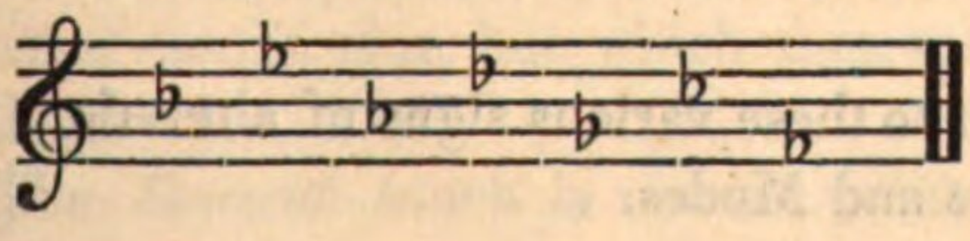


The Sharps are to be placed in the following way:





The Flats are to be placed in the following way:



Naturals.—When a note has been altered, either by a sharp or a flat, it may be returned to its natural tone by means of a third sign, which is marked thus (♮), and called a *natural.*

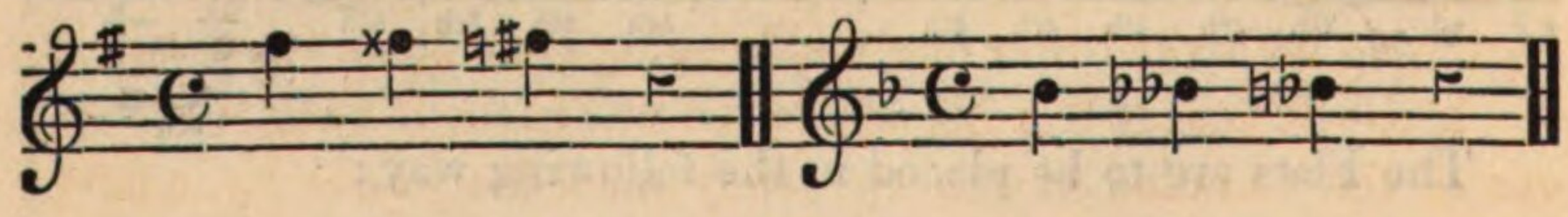
Sharps and flats are divided into fixed or essential, and intermediate or accidental; the essential are placed at the cliff: they serve to determine the key in which a piece of music is written, and their effect is to alter, throughout the whole piece, the notes which they represent. They ought always to keep the above-mentioned progression.

Accidental sharps and flats, which serve only to produce a momentary alteration, may be placed indiscriminately in the course of a piece of music, in whatever bar it may be. They are not reduced to any progressive order, and their employment is to announce or to determine a modulation, for the sake of ornament; but they do not alter the note they represent, except during the bar wherein they are found, it being understood, that on the termination of this bar the effect ceases entirely, without calling in the help of a *natural*, of which sign the note rendered sharp or flat borrows the assistance only to become natural again in the course of the same bar where it has just been altered.

§ 13.—*Double Sharps and Double Flats.*

It is sometimes necessary to alter afresh a note already altered, either at the clef or accidentally; that is to say, to raise or depress it another half-tone, which is done by the use of signs called *double sharp* (+) and *double flat* (♭♭). It is clear that, in this case, a double sharp becomes equal to the note which follows it in the scale: thus, *Do* (C) + is equal to *Re* (D) and *Fa* (F) + to *Sol* (G), &c. By the same rule, a note altered by a double flat becomes equivalent to the note which precedes it: thus, *Si* (B) ♭♭ is equivalent to *La* (A), as *Mi* (E) ♭♭ is equivalent to *Re* (D), and so on.

A natural placed before a double sharp or double flat alters it only half a tone, on which account it is customary to have the natural followed by a sharp or flat, as follows:

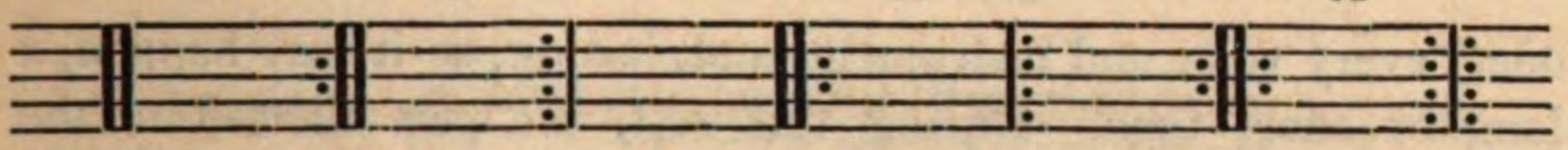


We shall revert to these various signs of alteration, when we come to treat of Keys and Modes.

§ 14.—*Double Bar and Dotted Bar.*

The *Double Bar* is used to divide a piece of music into strains and sections, to separate one movement from another, or to mark the conclusion of a composition. When a *Double Bar* has two dots, or a single Bar has four, only on one side, they signify that the strain which is on the same side of the bar as the dots is to be repeated; but if the double or the single bar has dots on both its sides, they imply the repetition of the strains before and after it. Examples:

or or or

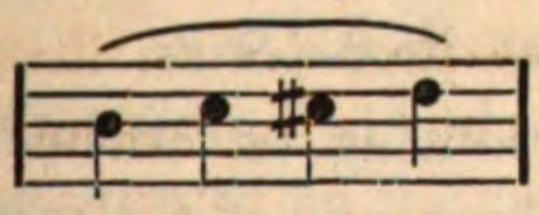


§ 15.—*Repeat or Reference.*

The *Repeat*, or *Reference*, *Segno*, or *Sign*, serves to lead the performer back from the end of a piece of music to the beginning, or at least to the beginning of a phrase which is to be repeated. There are always two repeats; the second marks a return to the first. The repeat is so figured:—(𝄋 𝄋).

§ 16.—*Direct—Slur—Tye—Staccato.*

The Direct (𝄐) is a sign used at the end of the staves, and placed on the line, or in the space, where the note occurs by which the following stave is commenced, in order that the performer may not err in passing from one stave to another.

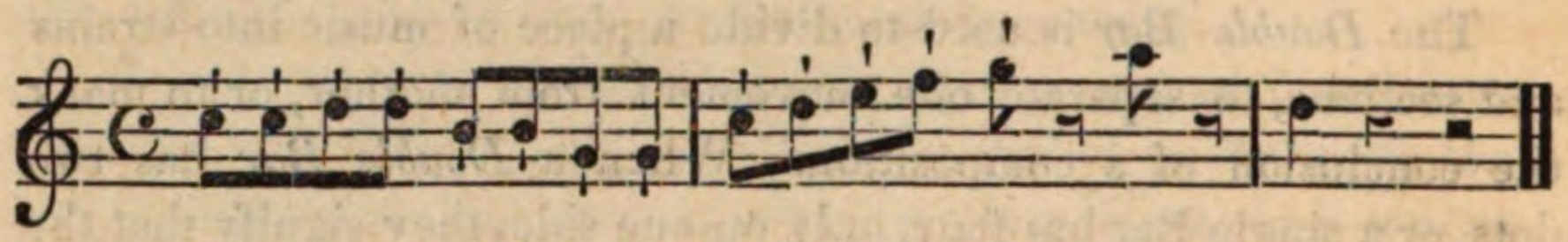
Slur.—When two or more notes are to be played *legato*, i. e. very smoothly, their connected performance is marked by the *slur*, so figured:  Then, each sound must be continued till the next begins.

A vertical slur (or }, placed at the side of a chord, implies that its notes are to be performed in a quick, but regular succession; beginning with the lower one, and keeping each down when struck.

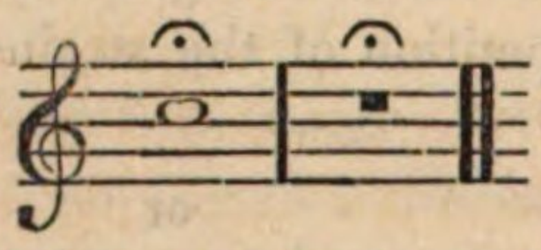
Tye.—When two notes are to be united, as if they were only one of the duration of the two, they must be joined by a curve line, made the same as the slur, but which then takes the name of *Tye*, *Bind*, or *Ligature*.

Staccato.—The *Staccato* touch is a short, pointed, and distinct

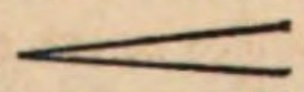
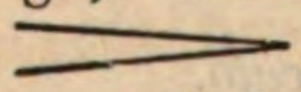
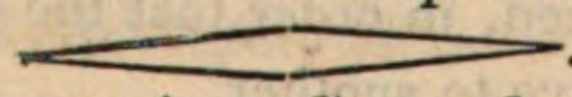
manner of performance, indicated by *dashes* placed over the notes intended to be so expressed. Example:



§ 17.—*Organ Point or Pause.*

The *Organ Point* or *Pause*, which is also called *Fermata*, and which is marked thus  is a rest suspending, at once, every voice and instrument, and, lasting, as it may happen, a long or short time. During this rest, the part allotted to the melody, or any other, has sometimes leisure to indulge in different passages or various ornaments, at pleasure. In other cases, the organ point is a general rest.

§ 18.—*Augmentation or Diminution of Sound.*

The composer has frequent occasion both to swell or augment the sounds, and to diminish them. In the first case he makes use of this sign,  called *Crescendo*, and in the second, of the reverse,  called *Diminuendo*. And when he wishes first to increase and then to lessen the sounds, he joins the two signs together, taking care that the junction of the two sounds be placed above the note where the amplification ceases, and the abatement commences, as  . The name of this latter sign is from the two anterior—*Crescendo-Diminuendo*.

GRACES, OR ORNAMENTAL NOTES.

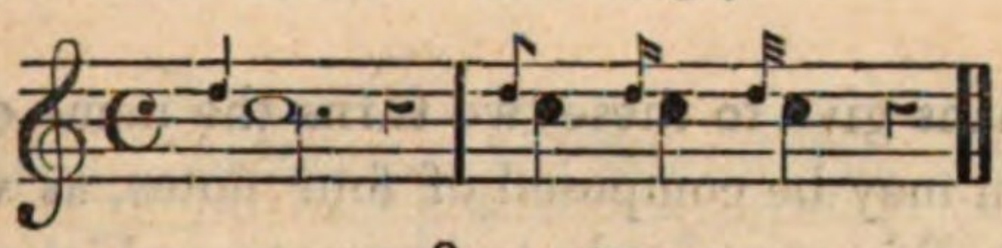
§ 19.—*Appoggiature—Beat—Slide.*

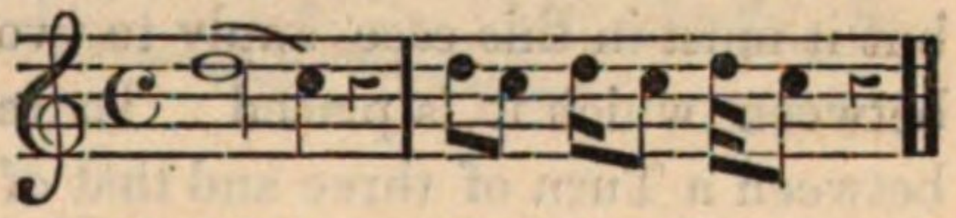
For the purpose either of introducing an ornament into the melody, or of rendering more striking one of the principal notes in a measure or phrase, recourse is had to one or more notes, which are not an intrinsic portion of the bar. These are designated in general by the titles of *Graces*, *Ornamental Notes*, or *Portamento di Voce* (part of the voice), and the several sorts of them are described in the following paragraphs.

The *Appoggiature*, or *Leaning Note*, is added above or below a principal note: if *above*, it may be at a tone or semitone above the principal note; if *below*, always at a semitone of it. The appoggiature is generally employed to soften and smooth the effect of certain distances. A chain of appoggiatures not only serves to supply the

intermediate sounds between extensive intervals, but gives display to the voice or finger, and affords scope for intonation and passionate expression. As they are known by their diminutiveness, they are also called *little notes*.

The appoggiature is not sounded in *solfaing*, it is heard or felt only in naming the note with which it is united; and, as it has no proportion or value of itself in the bar, it is allowed the duration belonging to its species—a duration which is almost always at the expense of the following note. It happens, sometimes, that nearly all the temporal value of the succeeding note is given to the note of grace, and that is made to lose accordingly.

This passage  may, there-



fore, have the following effect:

The ornamental notes are used in all intervals from the second to the octave, and are also employed in tenths.

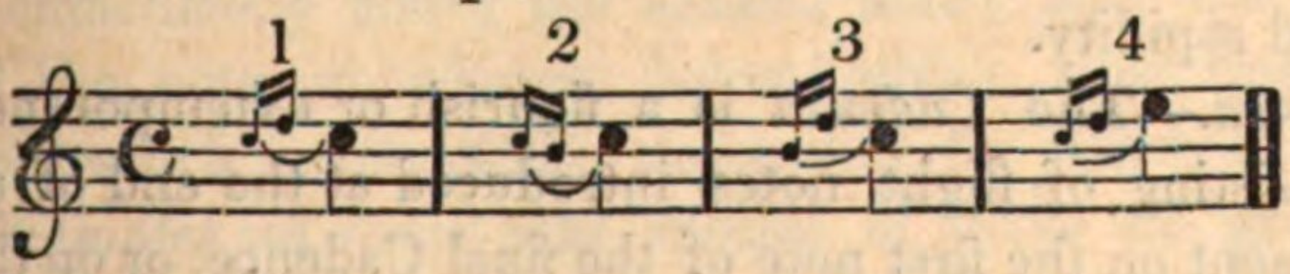
If the appoggiature be different to the note which precedes it, it is called *by retardation*, because it delays the notes expected by the ear; but if, on the contrary, it be the unison of that note, it is called *by anticipation*, because it causes it to be heard sooner.

Beat and *Slide*.—If the appoggiature is one semitone lower than the embellished note, it is called a *Beat;* and if it consists of two notes, gradually ascending or descending to the note it is intended to ornament, it is called a *Slide*. The Slide must be attached to the principal note by a Slur.

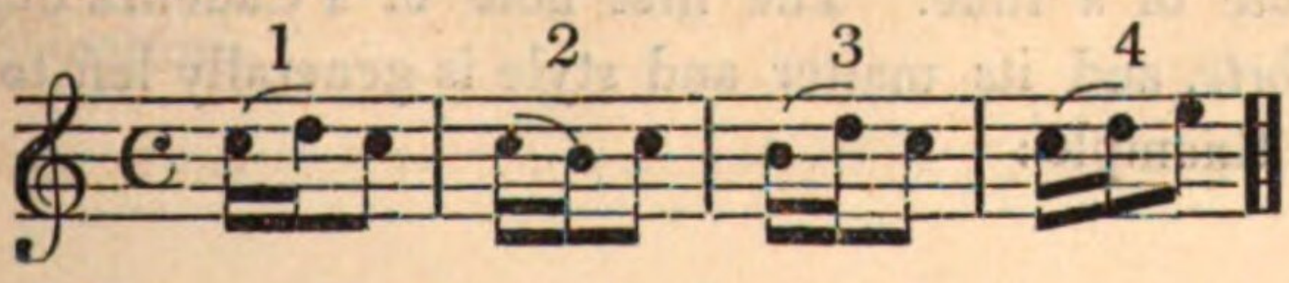
§ 20.—*Mordente*.

The grace, called *Mordente* or *Spring*, is always composed of two litte notes, preceding the note to be graced, the first of which is ordinarily the same as this note, and the second the note immediately superior or inferior.

Here are several examples of the Mordente:

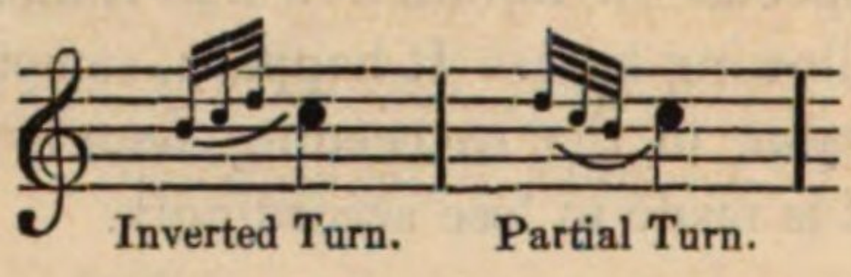


and this is their effect:



§ 21.—*Turn—Cadenza—Roulade.*

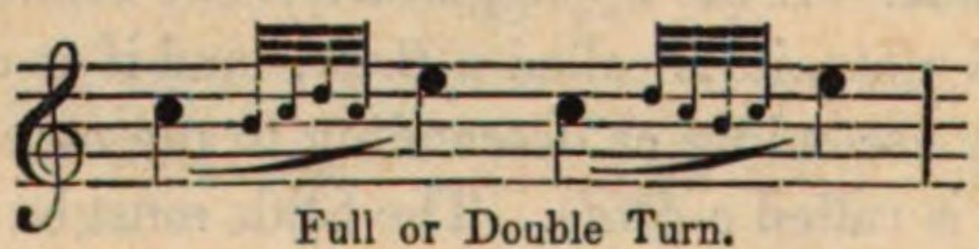
If to the first example of mordente be added a *Si* (B), and to the second a *Re* (D), with which it commences, another grace is thereby formed, which is composed of three notes instead of two, and which is denominated *Turn:* the first is ascending, and takes the name of *Inverted Turn;* the second is descending, and is called *Partial Turn.* Example:



Inverted Turn. Partial Turn.

The Italians give to these two turns the name of *Grupetto.*

The Turn may be composed of four notes, as well as of three; but it must in this case apply to two notes, which are its basis, and between which it is placed. To render the affinity which exists between a Turn of three and that of four notes more intelligible to our readers, we shall transform the Turns of the preceding example, which are of three notes, into Turns of four. If we allow, for this purpose, that the fundamental notes of our Turns of four notes ought to be *Do* (C) and *Mi* (E), and add to each Turn of three notes from the preceding example the *Do* (C) to which it applies, as a little note making a part of it, it will stand thus:

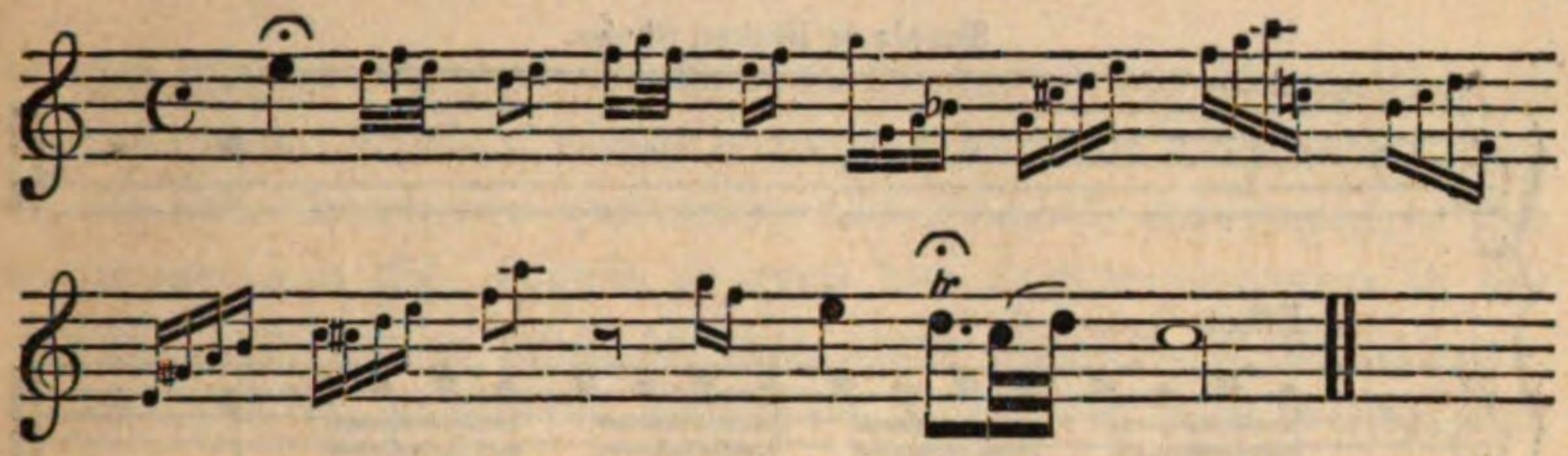


Full or Double Turn.

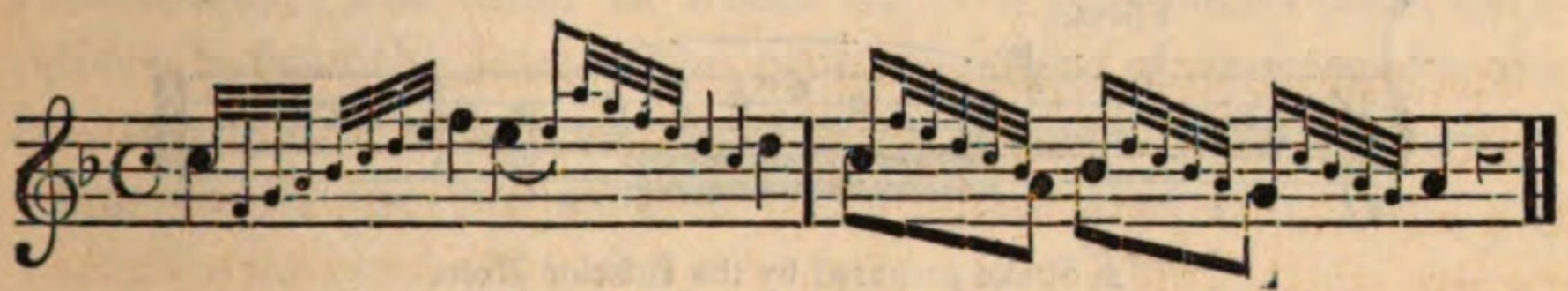
As the notes of the Turn are invariably the same, relatively, to the principal note or notes, it has been decided, in order to save the trouble of writing them, to mark the Turns by this sign, ∼, which is placed either upon one, or between two notes, accordingly as the Turn ought to be of three or four notes.

This grace ought always to be united to the principal note, and only to form a whole with it. It ought to be executed with precision and rapidity.

Cadenza.—The *Cadenza* is a flourish or extemporaneous passage, consisting of flight notes introduced at the end of a melody or movement on the first note of the final Cadence, or on the penultimate note of a tune. The first note of a Cadenza ought to be played *forte,* and its matter and style is generally left to the performer. Example:



Roulade.—The *Roulade* is a smooth but rapid course of notes interspersed in the course of an air without breaking the time or disturbing the subject matter of the composition. Example:

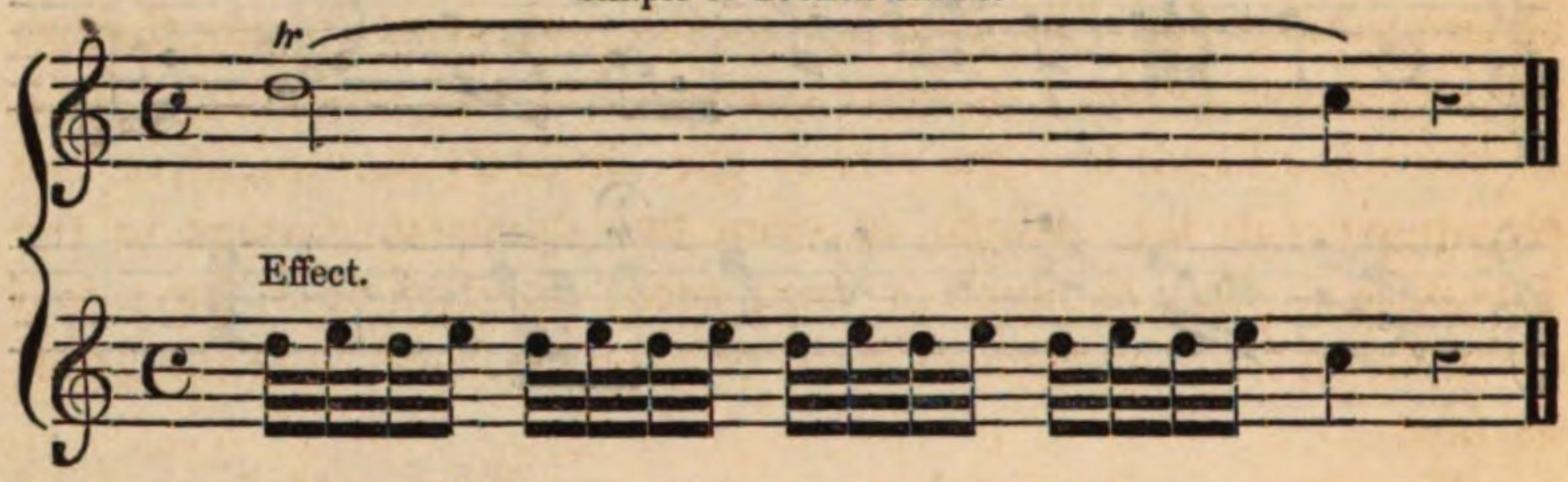


§ 22.—*Shake.*

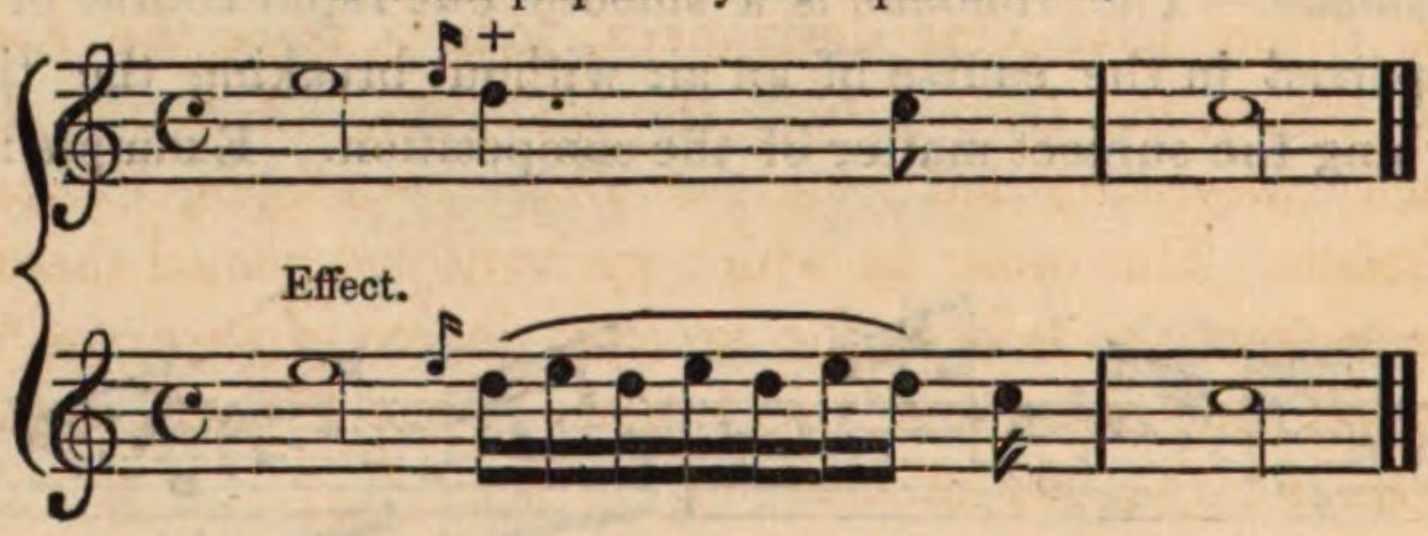
We have now to treat of the *Shake*, which is one of the ornaments most used, but which is in reality nothing more than a species of tremor of the voice or instrument. The shake is effected by two notes which are sounded successively. The shake of these two notes ordinarily depends on the penultimate note of a musical phrase, and it is invariably with the note above the one to be shaken, that the shake is effected.

There are two kinds of Shake. One is the *Full Shake*, and consists in not commencing the shake in the voice until support has been given to the note immediately above or below; a quality from which it has derived the additional appellation of *prepared Shake.* The other, called *broken Shake*, consists of making the shake of the voice without any preparation, on which account, it is also called *simple Shake.* In order that a shake may be perfect, it is requisite, not only that it be prepared, but that it be also finished, which is accomplished by sounding, after the shake,—1st. the note immediately above the shaken note; 2nd. the shaken note. 3rd the note immediately below, which, most frequently, is that one which precedes the shake, and by which it is prepared. Examples of these four species of shake are given, by which they will be better understood than by the most lengthy verbal explanations.

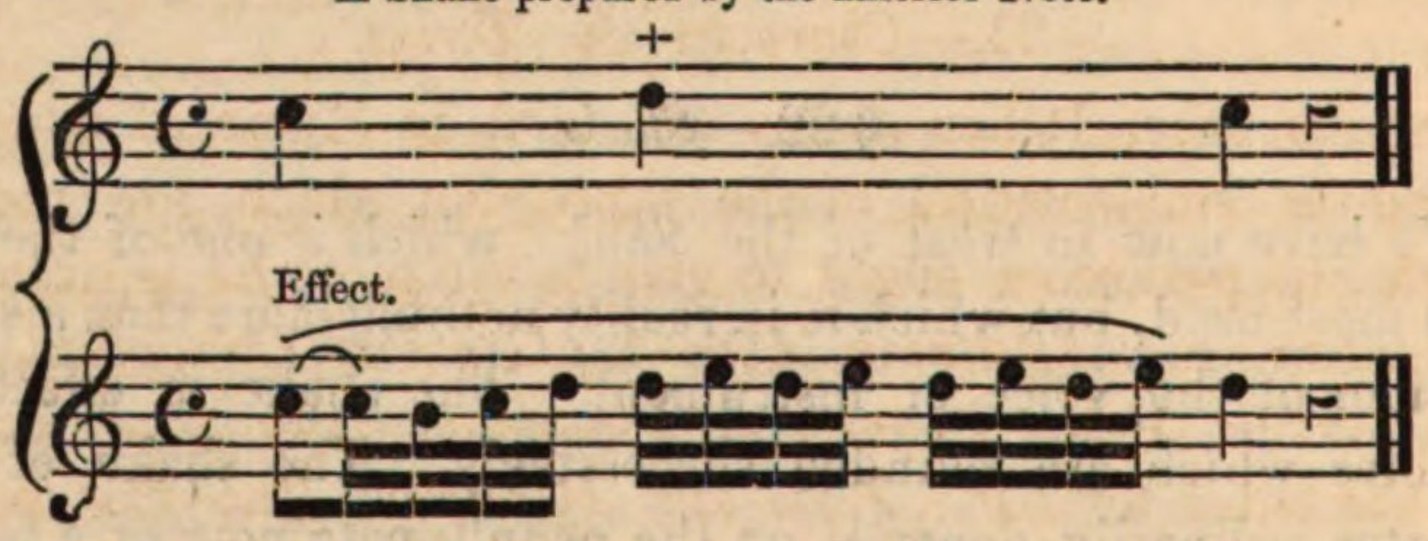
Simple or Broken Shake.



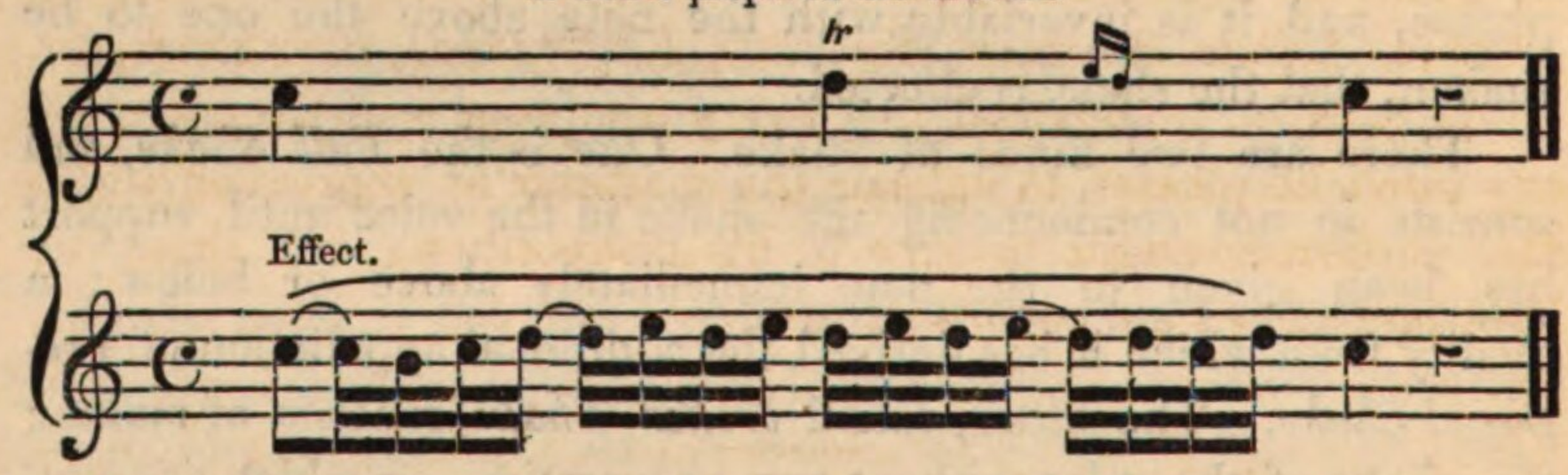
A Shake prepared by the Superior Note.



A Shake prepared by the Inferior Note.



A Shake prepared and finished.



These examples show that the shake is indicated by the sign of (+), or by the two letters (*tr*), the first of the word *trill*. They are quite sufficient to give the reader a perfect insight into every species of shake.

§ 23.—*Movement.*

We shall conclude this chapter with a short explanation of musical movements. It is from the nature of this movement that the notes acquire their respective proportions; for a bar composed

of two minims has less duration in the movement *Presto*, than in the movement *Lento*, a measure composed of two crotchets. And, on the other hand, two quavers in the *Andante* movement, or two semiquavers in the *Adagio*, or even two demisemiquavers in the *Largo*, have often as much or even more duration than have two crotchets in the movement *Vivace*, or even two minims in the *Prestissimo*.

The three fundamental movements are *Lento*, *Moderato*, and *Presto*. They have nine derivatives, that is, from the *Lento*,—*Adagio*, *Grave*, and *Largo*; from the *Moderato*,—*Andante*, *Andantino*, and *Allegretto*; and from the *Presto*,—*Allegro*, *Vivace*, and *Prestissimo*. The order in which we have just named these derivatives, is from the least to the greatest degree of slowness for the first movement, and from the lowest to the highest degree of quickness for the two others.

§ 24.—*Characteristic Terms.*

Various other Italian terms are used in Music, of which the meaning is emblematical of the expression which the vocal or instrumental performer ought to give to the piece he is executing. These terms are—*Affettuoso*, *Amoroso*, *Grazioso*, *Con dolore*, *Maestoso*, *Cantabile*, *Dolce*, *Piano* and *Pianissimo* (the former denoted by P, the latter by PP.), *Forte* and *Fortissimo* (the first marked by F, the second by FF.), *Mezzo Forte*, *Mezzo Voce*, *Sotto Voce*, *Espressivo*, *Agitato*, *Scherzoso*, *Sostenuto*, *Rinforzando*, *Smorzando*, &c.

It is to be understood that every composer is at liberty to use any terms he pleases, to indicate the character or expression which the performer ought to give to his composition; but those we have just named are commonly used.

CHAPTER IV.

DEGREES, SOUNDS, OCTAVE, MELODY AND HARMONY—TONES AND SEMITONES—DIATONIC, CHROMATIC, AND ENHARMONIC GENERA—INTERVALS, AND THEIR INVERSIONS—CONSONANCE AND CONCORDS; DISSONANCE AND DISCORDS.

§ 25.—*Degrees, Sounds, Octave, Melody, Harmony.*

It was stated in the first chapter that the stave is composed of five principal lines, and of various other additional ones, called

Ledger Lines. The distance between a line and the next space, or between a space and the next line, is called a *Degree.* Every Stave, therefore, contains as many degrees as there are lines and spaces.

Sounds.—It was shown in the same chapter that the notes serve to represent the sounds. Since there are seven notes in Music, it follows that there are seven different natural sounds in the interval comprised between these seven notes. This interval is called an *Heptachord,* if the first note be not repeated; an octave, if repeated: and this repetition of the first sound is also called an *Octave,* because it forms the eighth note. But when the seven notes are altered, as in the preceding chapter we have seen they may be, either by sharps or flats, their alteration produces five additional sounds, which, with their seven natural sounds, constitute a total of twelve. These twelve sounds, both natural and altered, are the basis and cause of all melody and of all harmony. By Melody is understood the progressive succession of various simple sounds. A single voice, or the succession of single sounds on an instrument, therefore, is capable of producing only Melody. The simultaneous union of various sounds, more or less pleasing to the ear, constitutes what is called *Harmony.* Several voices or several simultaneous instrumental sounds are consequently requisite for the production of Harmony.

§ 26.—*Tones and Semitones.*

The seven sounds represented by the seven natural notes are not all equal. Of these seven sounds, two have less extent than the five others; and, to mark this inequality, it has been decided to denominate *Tone* the greatest extent from one natural note to another, and *Semitone* the smallest extent between two natural notes. The two *Semitones* are from *Mi,* E, to *Fa,* F, and from *Si,* B, to *Do,* C. There is consequently a *Tone* from *Do,* C, to *Ré,* D, and from *Ré,* D, to *Mi,* E, from *La,* A, to *Si,* B, and between all the other notes. In every scale, the first degree is the distance from the first to the second note; the second degree, that from the second to the third, and so on. We informed the reader (Chapter I, § 3) that every scale takes its name from the note with which it begins; this note is called its *Key-note* or *Tonic.* Thus, in the scale of *Do,* C ♮ major, as in all those of the major mode, the two semitones will be from the third to the fourth note, and from the seventh to the repetition of the tonic; and in that of *La,* A ♮ minor, as in all the scales of the minor mode, they will be from the second to the third note and from the fifth to the sixth. Hence it follows that

every scale, when the first sound is repeated, contains seven degrees, and that these seven degrees comprise five *Tones* and two *Semitones*.

§ 27.—*Division of Tones.*

As the sounds may be altered, that is, may be raised or lowered, so the tones are susceptible of division. The greatest number of parts into which the best-experienced ear can divide a tone, that is, the greatest number of sounds which it can succeed in distinguishing in the sonorous interval between *Do*, C, and *Ré*, D; *Ré*, D, and *Mi*, E; *Fa*, F, and *Sol*, G, &c., is nine. Formerly every tone was subdivided into nine parts, called *commas;* and as these nine parts could not be divided equally, five of them formed a semitone, denominated major, and the four others a semitone, denominated minor. These two unequal semitones were, and are still, the most simple division of the tone. Preserving as the basis this fundamental division, it is now agreed to designate *Major Semitones* that distance which exists between two different notes, as from *Mi*, E, to *Fa*, F; from *Si*, B, to *Do*, C; from *Do*, C sharp, to *Ré*, D natural; from *Ré*, D natural, to *Mi*, E flat, or to *Do*, C sharp; from *Sol*, G flat, to *Fa*, F natural, &c.: and *Minor Semitone*, that distance which exists between the alterations of a like note, as from *Do*, C natural, to *Do*, C sharp; from *Ré*, D, either sharp or flat, to *Ré*, D natural, &c. Formerly, also, the appellation of *Major Semitone* was applied to every sound altered by a sharp, and of *Minor Semitone* to every sound altered by a flat: this last distinction is now disused.

§ 28.—*Conjunct and Disjunct Degrees.*

There are two sorts of Degrees, the *Conjunct* or *Diatonic*, and the *Disjunct*. The Conjunct Degree is that distance which exists between one note and that which follows it in the natural order of the scale; as from *Do*, C, to *Ré*, D; from *Ré*, D, to *Mi*, E, &c.: the disjunct is the distance which exists between two notes which do not follow one another in the natural order of the scale; as from *Do*, C, to *Mi*, E; from *Do*, C, to *Fa*, F; from *Do*, C, to *Sol*, G; from *Do*, C, to *La*, A; from *Ré*, D, to *Fa*, F; from *Ré*, D, to *La*, A; from *Ré*, D, to *Si*, B, &c. &c.

§ 29.—*Diatonic, Chromatic, Enharmonic Progression.*

Hence it follows that *Diatonic Progression* means progression by conjunct degrees: it is the scale of nature; it is that of which we have hitherto spoken, and which is composed of five tones and

two major semitones. What is called *Chromatic Progression* is the division of the seven notes into twelve semitones. These are the twelve sounds, as we mentioned at the opening of this chapter, that they comprise by means of their alteration in the use of sharps or flats. Finally, that is denominated *Enharmonic Progression* which results, or is considered to result, from quarter tones. The division of the tone into nine *commas*, of which we have spoken above, is the basis of this genus. But, as the difference which exists, or is supposed to exist, between a *Do*, C sharp, and a *Ré*, D flat; between a *Mi*, E sharp, and a *Fa*, F natural; between a *Fa*, F flat, and a *Mi*, E natural, &c. &c. is impracticable upon fretted and keyed instruments, and almost imperceptible upon all others, the Enharmonic genus has been entirely abandoned, either as ridiculous or impossible, especially in modern music, where the multiplicity of the passing notes, the rapidity of the movements, and the richness of the harmony, have superseded the ancient taste by ornaments of a different style.

§ 30.—*Enharmony, or Enharmonic Transition.*

Although the Enharmonic Progression has been abandoned as a specific genus, the name is still retained: for the passing from one note to another without changing the intonation according to the temperament is called *Enharmony*, or *Enharmonic Transition.* If, therefore, a *Ré*, D♭, be made to follow a *Do*, C♯; or a *Do*, C♯ a *Ré*, D♭; or a *Si* natural, to follow a *Do*, C♭; or a *Mi*, E♯, a *Fa* natural, and so on, the name of the note will be changed without changing the sound, and this alteration is called an *Enharmonic Transition.*

§ 31.—*Key-Notes or Tonics.*

Any of the twelve semitones contained in the octave may be employed as the Key-note or Tonic of a scale; but it must be understood that, for this purpose, the use of sharps and flats, essential as well as accidental, is positively indispensable; for there are but two semitones in the natural scale. We shall explain, in Chapter V, the rules for their use.

§ 32.—*Names of the Intervals.*

The necessity for distinguishing the degrees of intervals, or the distance between one sound and another, both in ascending and descending, has induced the adoption of a name for each of the tones and semitones of which the diatonic scale or gamut by con-

junct degrees is composed. The reader is already aware that every scale receives its name from the first note, which is called the Key-note or Tonic of such scale. It is thus named, because on this first note depend the respective positions of all the others. This first sound is always distant a full tone from the second; and consequently this first tone, which is the fundamental sound, the generative sound, if we may be allowed the expression, of all the others, is that which regulates the distance between them, and determines the intervals. And thus, in applying to a whole piece of music the name of the first note or sound of the scale in which it is written; in other words, the name of the Key-note or Tonic of such scale; or, in fine, the name of the key produced by that Key-note, it is characteristically said that the piece is in such or such a key.

The first note, therefore, of each scale is called *Tonic;* the second, *Second;* the third, *Mediant* or *Third;* the fourth, *Sub-dominant* or *Fourth;* the fifth, *Dominant* or *Fifth;* the sixth, *Sub-mediant* or *Sixth;* the seventh, *Leading Note, Sensible,* or *Seventh;* and lastly, the eighth, *Octave:* the last is, as we have stated, the repetition of the *Tonic* and the commencement of the next heptachord.

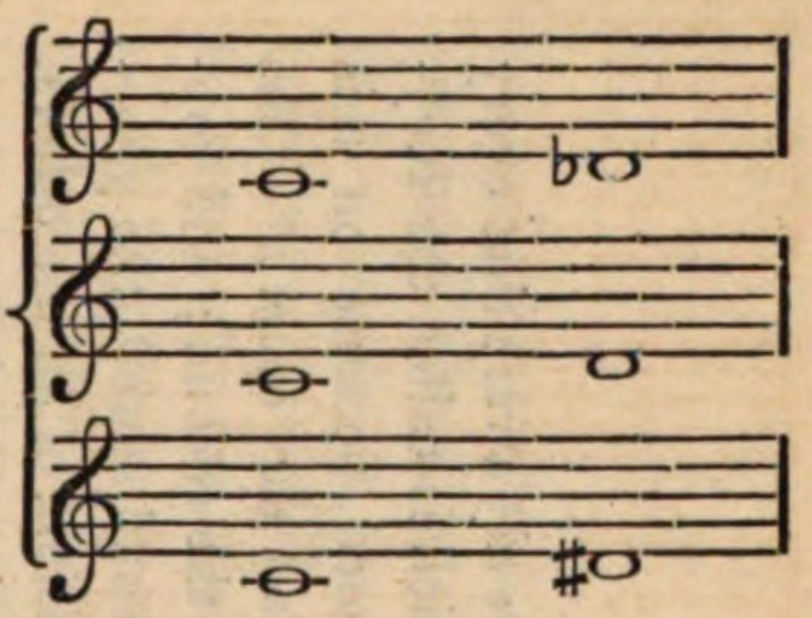
These names are applied in like manner to the intervals. When two notes follow one another in the order of their scale, they are said to form a *second;* when they are separated only by one note, they form a *third;* and when they are separated by two or three, they form a *fourth,* or a *fifth,* &c.

§ 33.—*Different Kinds of Intervals.*

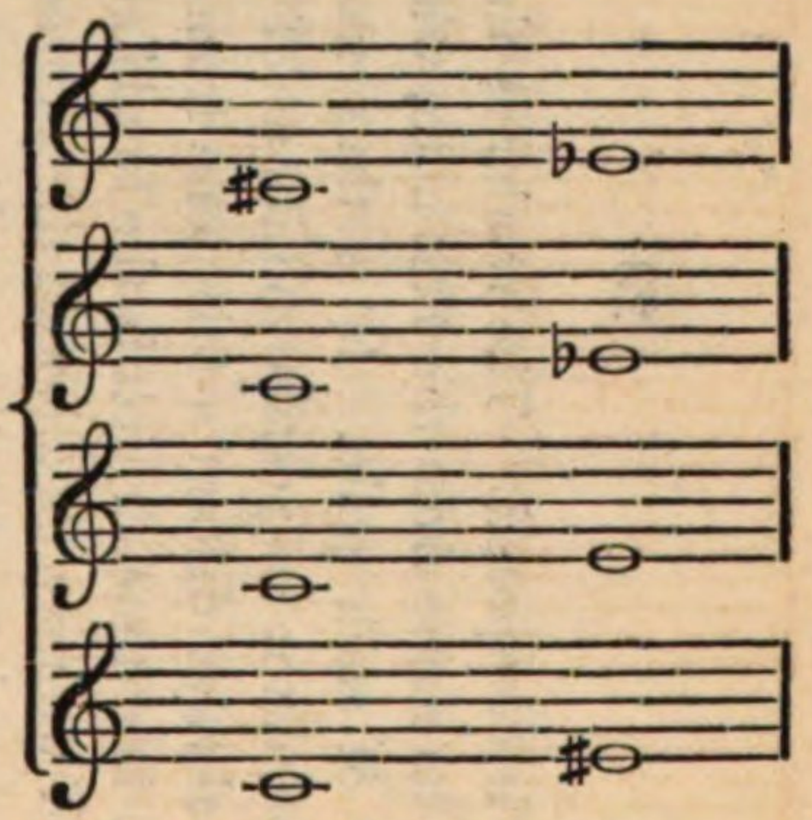
The intervals are of different kinds, and there are three or four sorts of each of them, which sorts take their names from the more or less tones and semitones which exist between the two notes that form them. The following is the list of all the intervals of different kinds, with the proportion of each, and an example to render them more clear.

UNISON NEVER ALTERS.

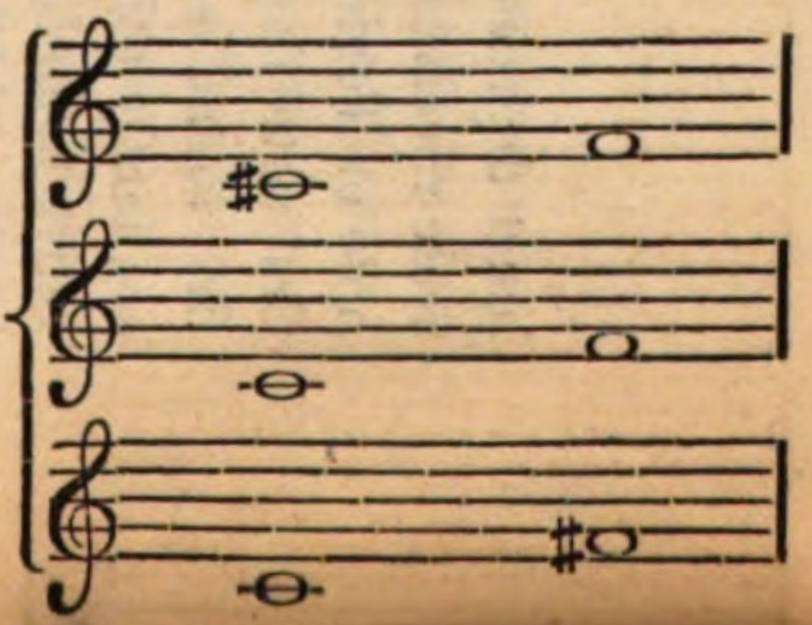
The Second is
- Minor, or lesser, and composed of a Semitone.....
- Major, and composed of a Tone.....
- Extreme Sharp, or superfluous, and composed of a Tone and a Semitone.....



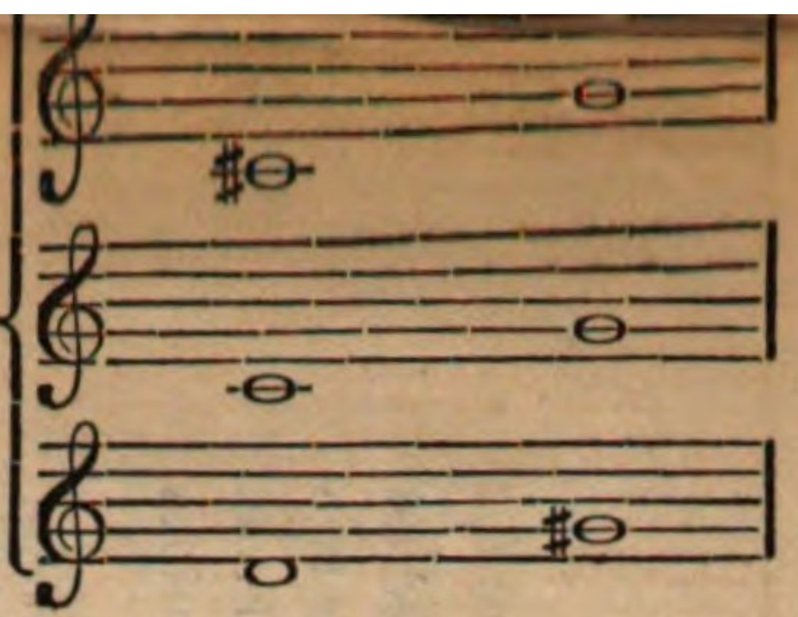
The Third is
- Imperfect, or diminished, and composed of two Semitones.....
- Minor, or lesser, and composed of a Tone and a Semitone.....
- Major, and composed of two Tones.....
- Extreme Sharp, or superfluous, and composed of two Tones and a Semitone.....



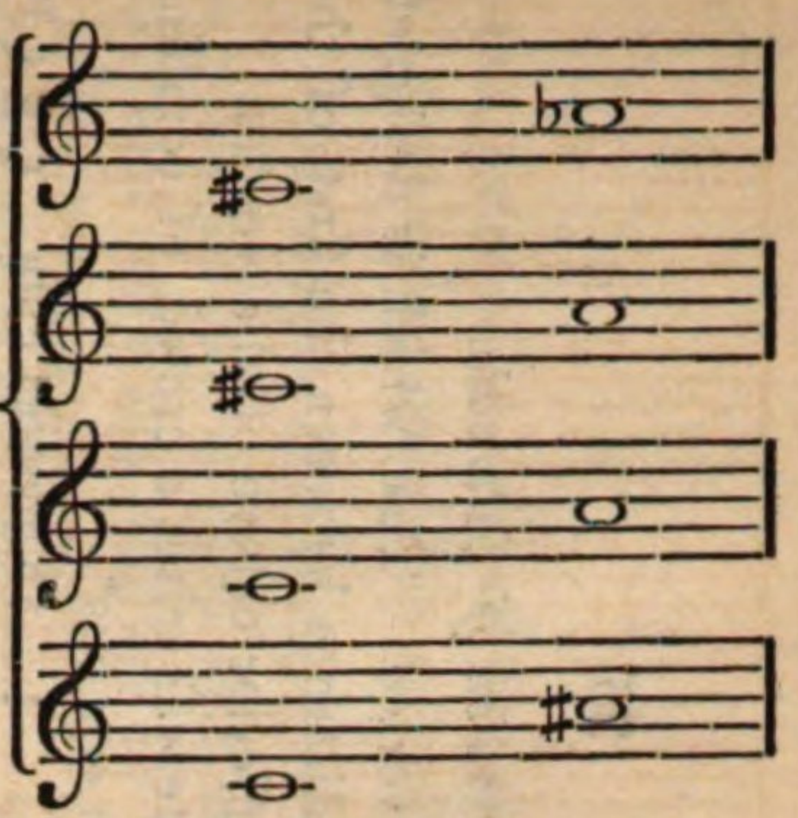
The Fourth is
- Imperfect, or diminished, and composed of a Tone and two Semitones.....
- Perfect, natural, or unaltered, and composed of two Tones and a Semitone .....
- Extreme Sharp, or superfluous (Tritone), and composed of three Tones .....



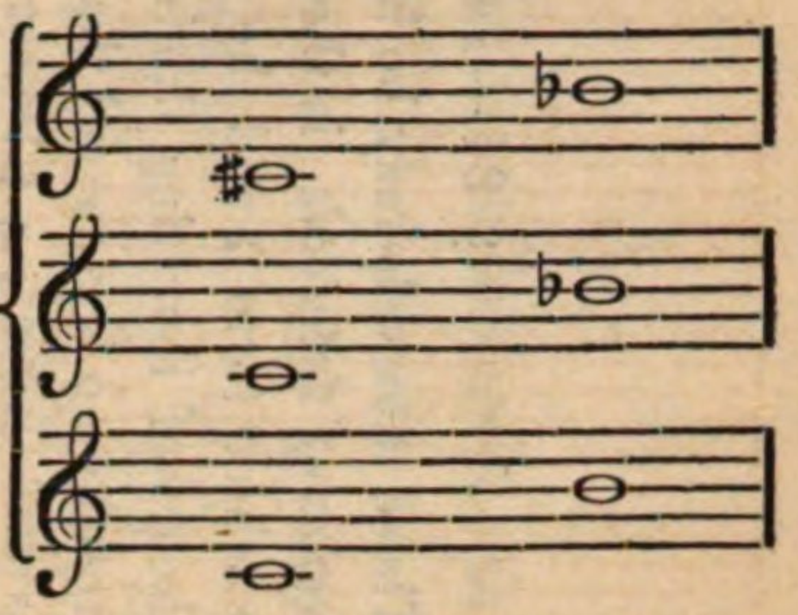
The Fifth is..
- Imperfect, false, or diminished, and composed of two Tones and two Semitones.....
- Perfect, natural, or unaltered, and composed of three Tones and a Semitone .....
- Extreme Sharp, or superfluous, and composed of three Tones and two Semitones .....



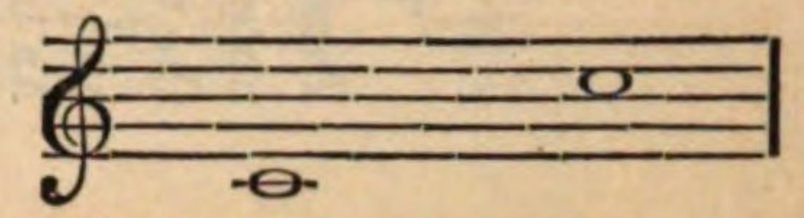
The Sixth is..
- Imperfect, or diminished, and composed of three Tones and a Semitone.....
- Minor, or lesser, and composed of three Tones and two Semitones .....
- Major, and composed of four Tones and a Semitone .....
- Extreme Sharp, or superfluous, and composed of four Tones and two Semitones.....



The Seventh is
- Imperfect, or diminished, and composed of three Tones and three Semitones.....
- Minor, or lesser, and composed of four Tones and two Semitones .....
- Major, and composed of five Tones and a Semitone.....



The Octave never alters, and is composed of five Tones and two Semitones .....

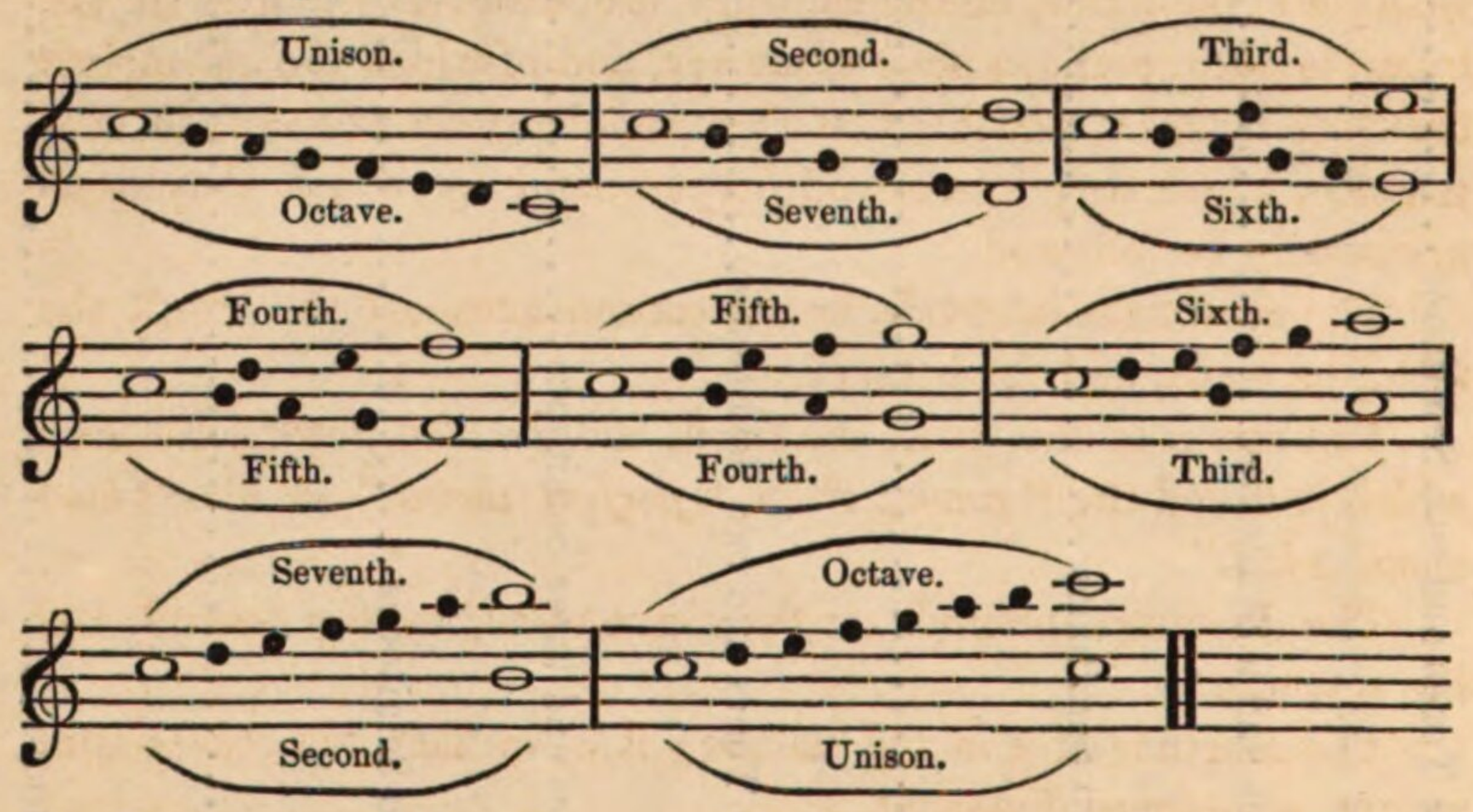


§ 34.—*Inversion of Intervals.*

These intervals may be inverted. That which is designated an *Inversion of Intervals,* is the distance between the first of the two notes which form it and the inferior octave of the second. From the theory of inverting the interval arises a crowd of combinations and results no less useful than curious*.

An inverted Unison	Becomes	Octave.
An inverted Second	Becomes	Seventh.
An inverted Third	Becomes	Sixth.
An inverted Fourth	Becomes	Fifth.
An inverted Fifth	Becomes	Fourth.
An inverted Sixth	Becomes	Third.
An inverted Seventh	Becomes	Second.
An inverted Octave	Becomes	Unison.

An example will render this rule clearer.



§ 35.

The reader has learned from the preceding paragraph what a second, a third, &c. becomes; but of what each species of second, of third, of fourth, of fifth, &c. becomes, he is still ignorant. One general rule will suffice to render him familiar with the subject, and we shall dispense with laying before him a multitude of unnecessary examples.

General Rule.—Every inverted minor becomes major, and every inverted major becomes minor.

Every natural or unaltered interval continues unaltered in its inversion.

Every imperfect interval becomes extreme sharp; and, *vice versâ,* every extreme sharp interval becomes imperfect.

By this rule the reader, who is already sensible that a second becomes seventh, that a fourth becomes fifth, and a sixth becomes third, will easily perceive that an inverted minor second becomes major seventh; that an unaltered fourth becomes an unaltered fifth;

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* Formerly so. See the introduction, and the word inversion in the analytical index.

and that an extreme sharp sixth becomes, by its inversion, an imperfect third, and so on of the other intervals.

§ 36.—*Consonances and Concords—Dissonances and Discords.*

The intervals are divided into consonant intervals or "*consonances*," and dissonant intervals or "*dissonances*." The union of two or more consonances form a "*concord**," and that of *two or more dissonances a "discord†*." The former are those which afford to the ear the most delightful sensations, and on which it delights to dwell, experiencing a serenity that leaves it nothing to wish for: the latter, on the contrary, are those which give it the least pleasure, perhaps none whatever, and of which the incomplete harmony makes it sensible that they are the procrastinators of consonance, which they invoke and prepare, and by which they must necessarily be followed.

The consonant intervals, or the consonances, are the third, the fifth, the sixth, and the octave§.

The union of the tonic, the third, and the fifth, form a concord, which is called the "*common*" or "*perfect chord*," or the "*harmonic triad*."

The dissonant intervals, or the dissonances, are the second and the seventh.

The fourth is of a mixed nature; it is, in fact, sometimes consonant, sometimes dissonant.

It is used as a consonance in the second inversion of the perfect chord, and it may generally be looked upon as such always when it is accompanied by the third above, or the sixth below, or when it is met with between the intermediate or superior parts. It may be sometimes used as a consonance when it is extreme-sharp; but this very rarely, and the grave note is then treated as dissonant.

It is employed as a dissonance against the bass, and in all cases except those we have just enumerated.

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* See Castil Blaze's Dictionary of Modern Music, the word Consonant.

† *Concords* are consonant chords. *Consonances* are consonant intervals, and consequently part of concords. The signification of the word *consonance* ought to be confined to the interval between two consonant sounds. The word *concord*, on the contrary, is applicable to all consonances which can be united in harmony. Reciprocally:—*discords* are dissonant chords, and *dissonances* dissonant intervals entering into the composition of discords. There is *dissonance* only between two sounds‡, and by *discords*, on the contrary, may be understood the re-union of all the dissonances necessarily used in harmony; all summed up in the interval of second.

§ See the prolegomena.

‡ See Dr. Busby's Dict. of Music, art. Dissonance and Discord.

The unaltered fifth is the only consonant, so that imperfect fifths and the extreme sharp fifths ought to be considered and employed as dissonances.

The third and the sixth are consonant only when they are minor or major. Consequently, the imperfect third and the extreme sharp sixth cannot be treated but as dissonant intervals*.

§ 37.—*Division of Consonances.*

Consonances are divided into "*perfect*" and "*imperfect.*" The perfect consonances are the natural or perfect fourth, the natural or perfect fifth, and the octave*. They are called perfect, because in the two modes they are invariably at a similar distance from the Tonic (see § 40, Chapter V); because they cannot be altered without becoming dissonant; and the last two, finally, because they give to the ear the sensation of absolute rest.

The imperfect or neuter concords are the third and the sixth*. They are called *imperfect,* because their distance from the Tonic varies according to the mode to which they belong; and *neuter,* because they do not belong more to one mode than to another*. (See the same illustrated in § 40.)

We follow this denomination merely for the purpose of adhering to a custom respectable from its antiquity; still we think that it ought to be changed. The capability of the third and the sixth of being both major and minor without ceasing to be consonants, or, more properly speaking, the inherent property which they possess of losing none of their pre-eminence or beauty, whatever may be the mode in which they occur, would rather entitle to the appellation of *perfect* these two consonances, which are decidedly so, and would leave to the other that of *imperfect.* We may be allowed to add that by the designations of *perfect* and of *imperfect,* various authors indicate the quality more or less harmonious of the intervals, and others their property of producing a rest more or less absolute or final.

§ 38.—*Simple and Double Intervals.*

Intervals are "simple" or "double." The simple intervals are those contained in the octave, and of which we have been hitherto speaking: they are those of second, of third, of fourth, of fifth, of sixth, of seventh, and of eighth. The double intervals are those which require the extent of two octaves at least; such are those of ninth, of tenth, of eleventh, &c.

As these intervals are equivalent to those of double second, of

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* *See the prolegomena.*

double third, of double fourth, &c. we shall confine ourselves to the task of merely making the reader aware of their existence, and of informing him that they are scarcely ever extended beyond the interval of fifteenth, which is the repetition of the octave*.

Major and Minor Intervals.—The simple intervals are divided into "major" and "minor." The name of major is given when they are extreme sharp to those which may be so, that is, to those of second, fourth, fifth, and sixth; and they call minor, when they are imperfect, those which may be so, as the third, fourth, fifth, and seventh.

It is evident that the intervals of fourth and of fifth may be either imperfect or extreme sharp. They have this property from the nature of belonging to two modes, without subjecting their distance from the Tonic to any alteration.

This division of simple intervals into major and minor is of very little use, and consequently not much practised.

CHAPTER V.

COMPLETE THEORY OF KEYS AND MODES.

§ 39.—*Mode.*

By "Mode" is understood the melodic disposition of the notes of the octave, which determines the relation of each of them with the Tonic.

This disposition of the notes of the octave, that is to say, of the tones and semitones which it encloses, may be made to form two diatonic scales of different kinds; the one major, the other minor. It is *major* when there are two tones from the Tonic to the third, that is to say, when the third is major; and it is *minor*, when there is only a tone and a half from the Tonic to the third, that is, when the third is minor. Hence there are two sorts of Modes, according to the nature of the scale or gamut, produced by the position of the two semitones; the "major" Mode and the "minor" Mode.

§ 40.—*Differences between the two Modes.*

But the quality of the third is not the only circumstance which constitutes the mode; there are others that essentially distinguish the major from the minor. There are in the

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* See the prolegomena.

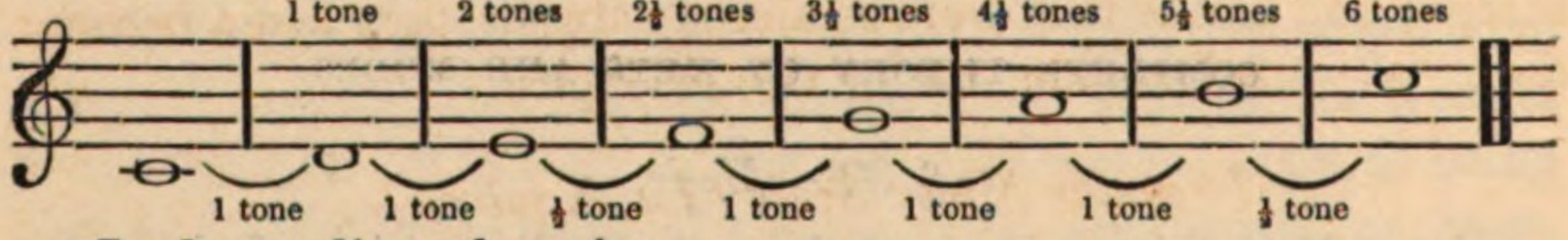
		MAJOR, MINOR MODE,	
From the tonic to the	second....	1 tone.	1 tone.
	third.....	2 tones.	1½ tone.
	fourth....	2½ tones.	2½ tones.
	fifth.....	3½ tones.	3½ tones.
	sixth.....	4½ tones.	4 tones.
	seventh...	5½ tones.	5½ tones.
	octave....	6 tones.	6 tones.
From the second to the third.....		1 tone.	½ tone.
From the third to the fourth.....		½ tone.	1 tone.
From the fifth to the sixth.....		1 tone.	½ tone.
From the sixth to the seventh....		1 tone.	1½ tone.

If this small comparative table be applied to the scales of Do, C, and La, A natural, it will be found that they are the most simple, the former of the scales of the major mode, the latter of the scales of the minor mode, and that they are consequently the model of the scales of the mode to which each of them belongs. Let us try the experiment.

MODEL OF THE SCALES OF THE MAJOR MODE.

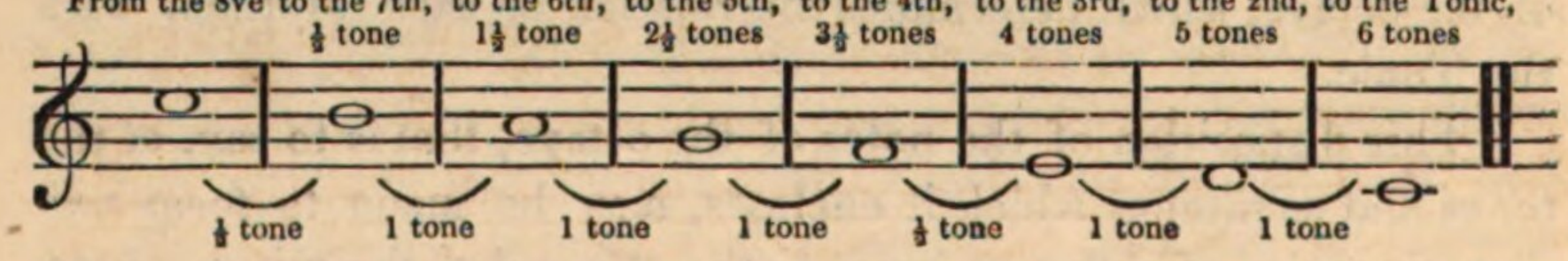
In ascending, there is:—

From the Tonic to the 2nd, to the 3rd, to the 4th, to the 5th, to the 6th, to the 7th, to the 8ve,
1 tone 2 tones 2½ tones 3½ tones 4½ tones 5½ tones 6 tones



In descending, there is:—

From the 8ve to the 7th, to the 6th, to the 5th, to the 4th, to the 3rd, to the 2nd, to the Tonic,
½ tone 1½ tone 2½ tones 3½ tones 4 tones 5 tones 6 tones

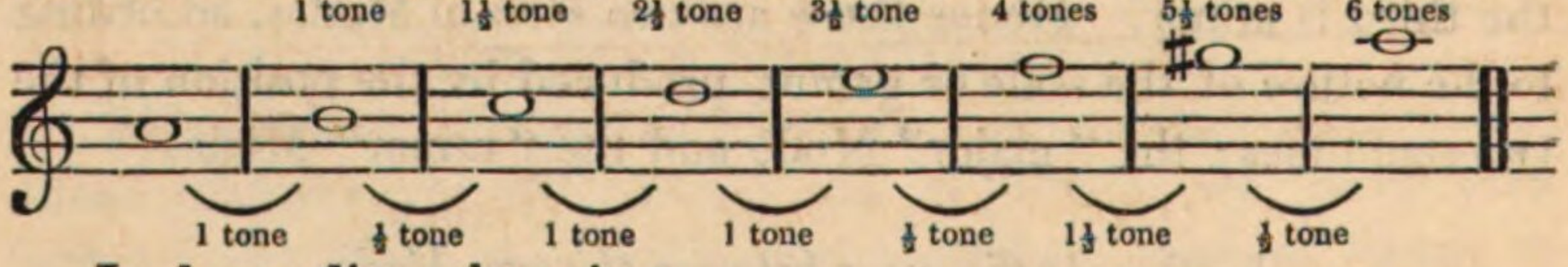


MODEL OF THE SCALES OF THE MINOR MODE.

Regular Minor Scale (La, A minor.)

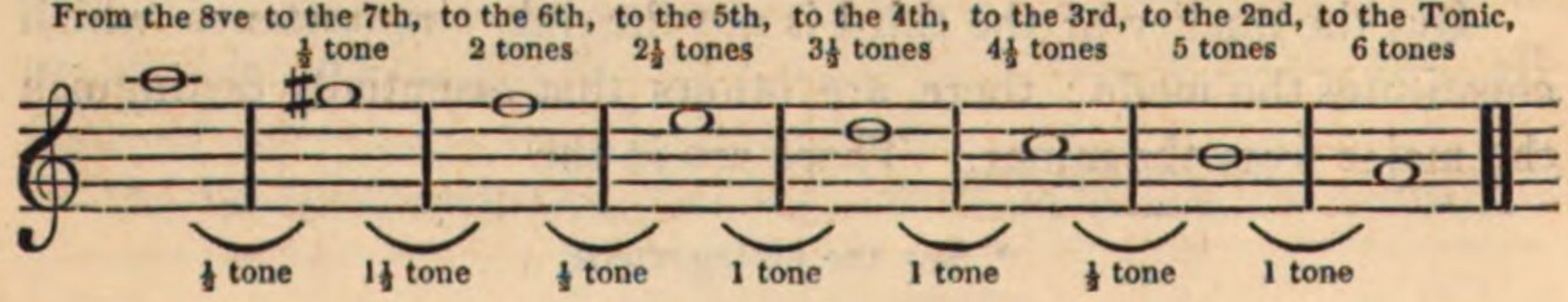
In ascending, there is:—

From the Tonic to the 2nd, to the 3rd, to the 4th, to the 5th, to the 6th, to the 7th, to the 8ve,
1 tone 1½ tone 2½ tone 3½ tone 4 tones 5½ tones 6 tones



In descending, there is:—

From the 8ve to the 7th, to the 6th, to the 5th, to the 4th, to the 3rd, to the 2nd, to the Tonic,
½ tone 2 tones 2½ tones 3½ tones 4½ tones 5 tones 6 tones



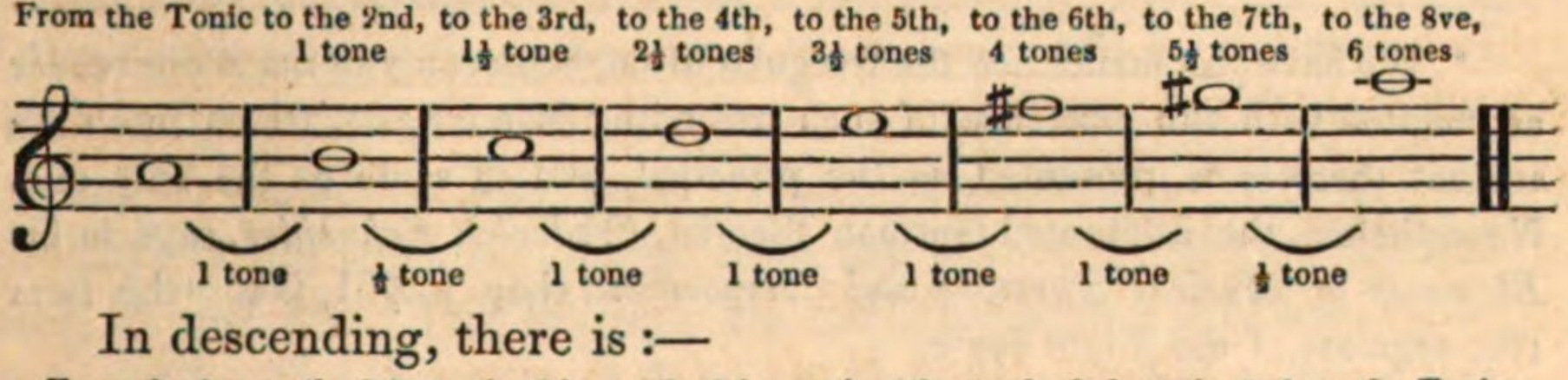
The necessity of finding always in each scale, according to its mode, the two semitones in the place in which they are in these two models; that is to say, of preserving this diatonic order, that of nature, is the only motive for having ascribed to the sharps and flats the invariable order of collocation fixed for them, and depicted in Chapter III, §§ 12 and 13; an order to which the double sharps and double flats are subjected in those keys of unfrequent use, in which simple chromatic signs are not sufficient to allow of the two semitones being in their place.

The minor scale, which is called *regular*, is not nevertheless the only one; there is another, called *irregular*; and it is thus named because it does not act in the same manner in ascending that it does in descending. It differs from the regular minor scale in two ways: 1st, in ascending, it has a whole tone instead of half a tone from the fifth to the sixth, and has only one tone instead of a tone and a half from the sixth to the seventh; 2nd, in descending, the seventh, sensible, or leading note, and the sixth lose the semitone elevation which they had accidentally acquired in the ascending scale; that is, that if they were rendered sharps, they again become naturals; that if they were rendered double sharps, they again become simple sharps; and that if they were rendered naturals, they again become flats. We shall subjoin one or two examples.

Irregular Minor Scale (La, A minor).

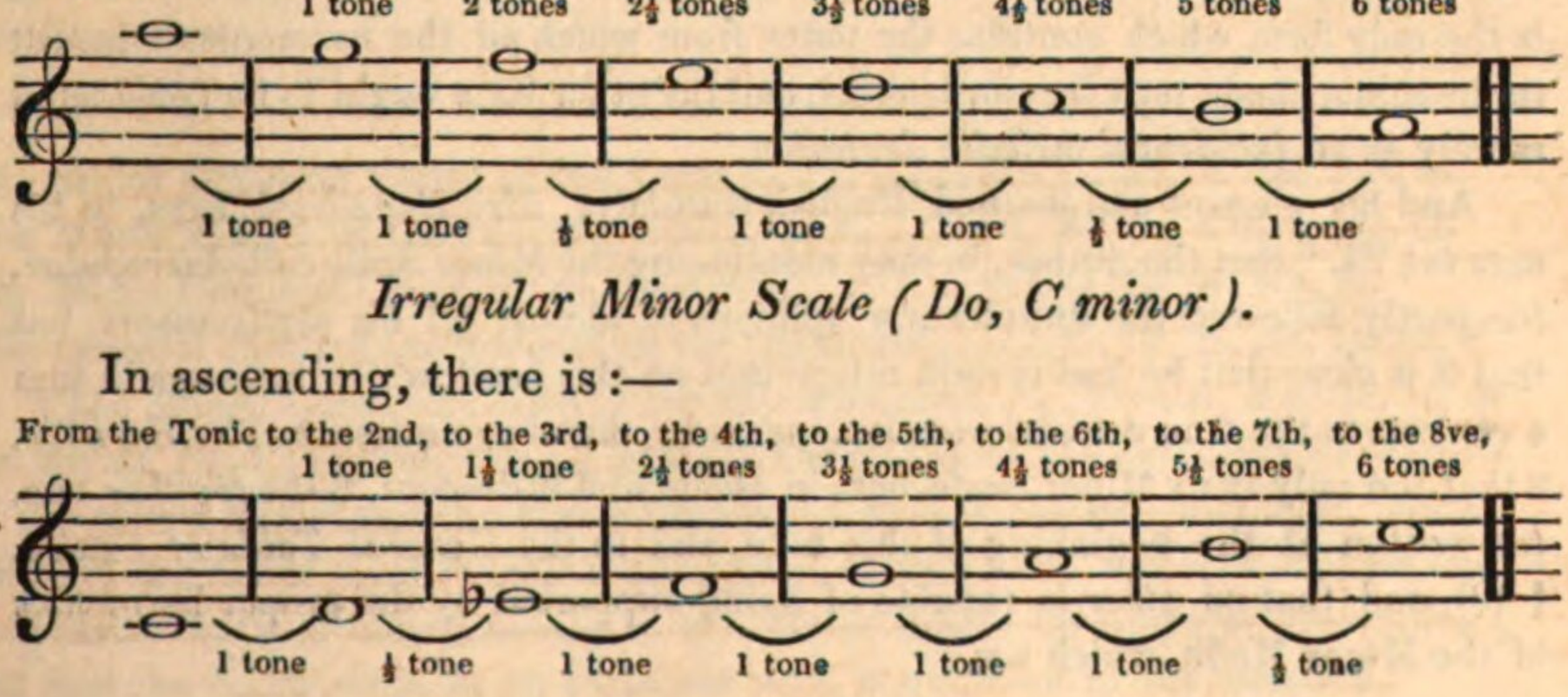
In ascending, there is:—

From the Tonic to the 2nd, to the 3rd, to the 4th, to the 5th, to the 6th, to the 7th, to the 8ve,
1 tone 1½ tone 2½ tones 3½ tones 4 tones 5½ tones 6 tones



In descending, there is:—

From the 8ve to the 7th, to the 6th, to the 5th, to the 4th, to the 3rd, to the 2nd, to the Tonic.
1 tone 2 tones 2½ tones 3½ tones 4½ tones 5 tones 6 tones

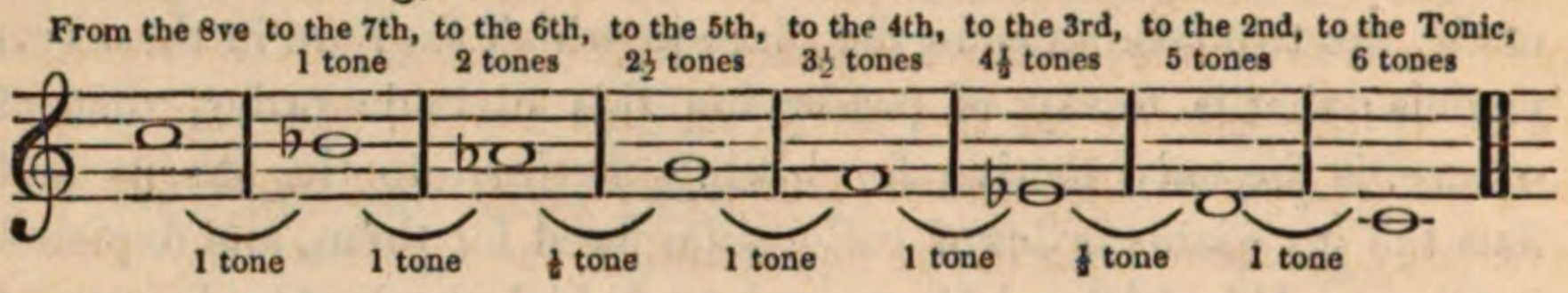


Irregular Minor Scale (Do, C minor).

In ascending, there is:—

From the Tonic to the 2nd, to the 3rd, to the 4th, to the 5th, to the 6th, to the 7th, to the 8ve,
1 tone 1½ tone 2½ tones 3½ tones 4½ tones 5½ tones 6 tones

In descending, there is:—



These two examples are quite sufficient to a perfect understanding of the differential relation of each sound to the following one in the irregular minor scale. Here, *Sol*, G, and *Fa*, F, accidentally rendered sharps in ascending, again become natural in descending, as they ought to be in the diatonic scale of *La*, A natural *minor;* and in that of *Do*, C, *Si*, B, of *La*, A, accidentally rendered naturals in ascending, again become flats in descending, as they ought to be in the diatonic scale of *Do*, C natural *minor*, (see § 49, the general table of scales). It is absolutely necessary to observe, that, in the irregular minor scales, it is only in descending that the tonic is at the distance of four tones, which in the minor mode ought always to separate it from the sixth. Hence it follows, that if the quality of the sixth, considering its momentary semitonic elevation in the ascending irregular minor scale, be not in the minor keys as invariable as that of the third, it is nevertheless (as is laid down in the above-named comparative table of the distances of the tonic from each sound in the two modes) the distance of the third and the sixth with regard to the tonic which especially and decidedly constitutes the mode*. The difference between the other intervals is

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* We have just mentioned the Irregular Minor Scale, only to make our reader acquainted with the existence of such ascending Minor Scale, which in all the ancient theories is presented as the principal, and in some as the only one. Nevertheless, the celebrated German theorist, *Frederick Schneider*, says, in his *Elements of Musical Harmony and Composition*, chap. v, §51, that "this form (the regular) of the Minor Scale,
Do, C—*Ré*, D—*Mi*, E flat—*Fa*, F—*Sol*, G—*La*, A flat—*Si*, B natural—*Do*, C, is the only form which contains the tones from which all the harmonies inherent in the minor mode may be constructed, and the other form ought to be considered merely as an *incidental melodic deviation*."

And his elegant and learned English translator, *Mr. Engelbach*, says, in his *note to* § 23, "that the author, in only mentioning the Minor Scale called *irregular*, has partly followed the ERRONEOUS opinions of almost all his predecessors, but that it is clear that he had certain misgivings on this head, which have made him a convert to the true doctrines (as it appears by the above question.)" He adds, "that the only TRUE Minor Scale, both in ascent and in descent, is the *regular* one, (as written at the beginning of this note, and in the *General Table of Scales*, § 49), and that *no other* is capable of being supported by the proper harmonies of the Minor Mode, which are

a medium of recognition between the two modes; but it is a less constituent principle, because it bears no direct affinity to the tonic, which is the essence of the mode, no less than of the key. In fact, the relation of the second, fourth, and fifth with the Tonic is invariably the same both in the major and in the minor mode. Between the Tonic and the second there is always, as in the preceding table, a full tone; between the tonic and the fourth, two tones and a half; and between the tonic and the fifth, three tones and a half. Neither does the distance between the seventh and the tonic ever vary, and in the two modes it is equally of five tones and a half; but the seventh cannot be classed in the same rank of immutability with respect to the tonic as the second, the fourth, and the fifth; because, in the minor mode, the quality of the seventh is not fixed to the clef like that of three other notes and intervals, and because, in all the keys of this mode, it depends upon an accidental alterative character. This peculiarity requires explanation, and, to afford it fully, we must return to the theory of keys, and even enter at large into all that concerns them.

§ 41.—*Division of Sounds.*

There are seven notes which produce seven distinct natural sounds. These seven notes may be both sharpened and flattened. The seven sharpened notes ought also to produce seven sounds, and the seven flattened notes seven other sounds, which would make a total of twenty-one sounds; but it is not so. The fact is, of the seven sharps there are two, *Si*, B, and *Mi*, E, the sound of which is the same as that of the two natural notes, *Do*, C, and *Fa*, F; and of the seven flats there are also two, *Do* and *Fa*, which do not differ in the slightest degree from the sound of the two natural notes, *Si* and *Mi*. The fourteen altered sounds, that is to say, those produced by the sharps and flats, are already reduced to ten; but in these ten,

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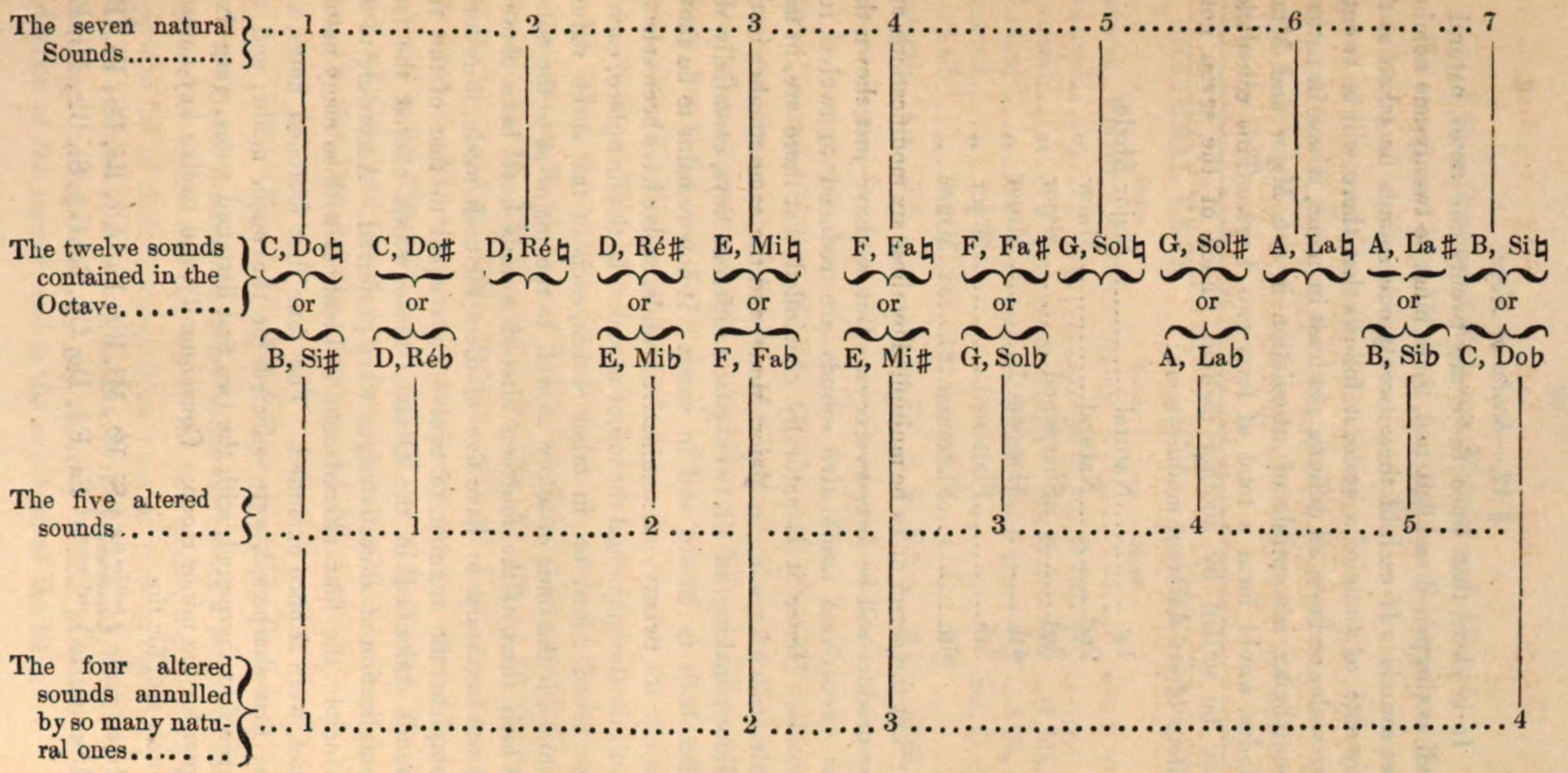
The Minor Common Chord of the Tonic.. .....*Do*, C, *Mi*, E flat, *Sol*, G.
The Minor Chord of the sub-dominant.. ....*Fa*, F, *La*, A flat, *Do*, C.
The Major Common Chord of the Domitant.....*Sol*, G, *Si*, B, *Ré*, D.
The essential chord of the Seventh on the Dominant..*Sol*, G, *Si*, B, *Ré*, D, *Fa*, F.

"The *Minor* Common Chord of the sub-dominant, *Fa*, F—*La*, A—*Ré*, D, in the key of *Do*, C, forming thus a primary Chord among the primitive harmonies of the Minor Mode, and the Minor Common Chord of the sub-dominant, having for third the minor third (which is the minor sixth of the tonic), it follows that such minor sixth is indispensable in the Minor Scale, ascending or descending; and that the major sixth, as an harmonic note, is quite out of the question."

Do♯	Ré♯	Fa♯	Sol♯	La♯
		is equal to		
Ré♭	Mi♭	Sol♭	La♭	Si♭

Thus each of the five sharps forms only a single sound with one of the five flats, and *vice versâ*. The fourteen altered sounds, therefore, produce only five different sounds, which, joined to the seven natural ones, make up the twelve sounds, of which we spoke at the opening of the preceding chapter, and which arise chromatically, that is, by semitones, as follows:


The seven natural Sounds
1
2
3
4
5
6
7
The twelve sounds contained in the Octave
C, Do♮
or
B, Si♯
C, Do♯
or
D, Réb
D, Ré♮
D, Ré♯
or
E, Mib
E, Mi♮
or
F, Fab
F, Fa♮
or
E, Mi♯
F, Fa♯
or
G, Solb
G, Sol♮
G, Sol♯
or
A, Lab
A, La♮
A, La♯
or
B, Sib
B, Si♮
or
C, Dob
The five altered sounds
1
2
3
4
5
The four altered sounds annulled by so many natural ones
1
2
3
4

§ 42.—*Scales or Keys.*

It is clear, that since there are twenty-one notes, natural as well as sharpened and flattened, there must be twenty-one nominative sounds. If each of these twenty-one sounds be taken as the key-note or tonic of a scale, it follows that there will be twenty-one scales or keys, all different, at least in name, if not in nature; these being susceptible of articulation in the Major and Minor Modes, would form a total of forty-two keys. This calculation may be settled by another method. Each of the seven notes admits of six different modifications:

1st .. ..Natural..... Major Mode.
2nd.....Natural.....Minor „
3rd.....Sharpened.....Major „
4th..... .....Sharpened.....Minor „
5th.....Flattened... ... .Major „
6th..... . .Flattened... ....Minor „

Let the seven notes be multiplied by these six modifications, and the product will be forty-two keys. But we have just shown that the twenty-one nominative sounds are reduced to twelve real sounds. Hence it is naturally concluded that there are, in fact, only twelve keys in the Major Mode, and the same number in the Minor; making, in all, twenty-four different keys, essentially distinct both in nature and in name. It now remains to be shown how, in the twenty-one nominative sounds, twelve have been selected both for the major and the minor modes. In the first place, each of the seven notes, or, in other words, each of the seven natural sounds, is the tonic of a key as well to the major as to the minor. Which, then, of the fourteen altered sounds have been chosen? It was necessary to have five of them for each mode, in order to complete the number of twelve keys equal to that of the real sounds contained in the Octave: those which offered the least complication of alterative signs were preferred. According to this principle, the four altered sounds, identical with so many natural ones, were at once excluded. The four first flattened notes, and the first sharpened, were selected for the major mode; and the three first sharpened, with the two first flattened notes, were fixed upon for the minor mode. Consequently, the twelve key-notes or tonics are, for the

Major mode } besides the seven natural notes { Si, B♭, Mi, E♭, La, A♭, Ré, D♭, Fa, F♯.
Minor mode } { Fa, F♯, Do, C♯, Sol, G♯, Si, B♭, Mi, E♭.

§ 43.—*Division of Keys into Natural and Altered.*

We stated, in Chap. IV, § 31, that the use of sharps and flats, both fixed and accidental, was indispensable to regulate the position of the two semitones in each diatonic scale. The following little table will show, at the first glance, what chromatic signs ought to be marked at the clef, in order to form and indicate each key in the two modes.

NATURAL KEYS.			ALTERED KEYS.		
	Major.	Minor.	Major.		Minor.
1.	Do, C natural. The seven natural notes...	3♭.	.....	9	Do, C sharp.... 4♯
2.	Ré, D natural.....	2♯ ..... 1♭	11.	Ré, D flat..5♭	.....
3.	Mi, E natural.....	4♯ ..... 1♯	9.	Mi, E flat..3♭	.11 Mi, E flat..6♭
4.	Fa, F natural	1♭ ..... 3♯	12.	Fa, F sharp.6♯	..8 Fa, F sharp.3♯
5.	Sol, G natural.....	1♯ ..... 2♭	.....	10	Sol, G sharp....5♯
6.	La, A natural.....	3♯ .. Sol (G♯) acc^{l}	10.	La, A flat..4♯	.....
7.	Si, B natural.....	5♯ ..... 2♯	8.	Si, B flat...2♭	..11 Si, B flat..5♭

It is apparent from this table—1st. That, besides the four altered sounds, *Si*, B♯, *Mi*, E♯, *Fa*, F♭, and *Do*, C♭, which are homogeneous, or identical with a similar number of natural ones, the three other altered sounds are excluded from the two modes, *Ré*, D sharp, *Sol*, G flat, and *La*, A sharp. 2dly. That three of the other seven altered sounds, viz. the first sharp, *Fa*, F, and the two first flats, *Si*, B, and M*i*, E, are admitted into each of the two modes. 3rdly. That these three altered sounds are precisely the homogeneous ones of those three of which we have just noticed the exclusion; for *Mi*, E♭, is equal to *Ré*, D♯, *Fa*, F♯, to *Sol*, G♭, and *Si*, B♭, to *La*, A♯. 4thly. That, besides the four altered sounds identical of a like number of natural ones, the five altered sounds rejected in the Major Mode are, *Do*, C♯, *Sol*, G♯, *Rè*, D♯, *La*, A♯, and *Sol*, G♭; and likewise the five rejected in the minor mode are *La*, A♭, *Ré*, D♭, *Sol*, G♭, *Ré*, D♯, and *La*, A♯.

§ 44.—*Keys adopted and Keys rejected by Custom.*

We deem it advisable to lay before the reader a complete list of the twelve tonics now in use in the two modes, together with an opposite list of their homogeneous ones at present rejected. He will be enabled to ascertain better by this, than he could by the most copious explanations, the motives which have led to the adoption of the former, and to the rejection of the latter.

ADOPTED TONICS OF THE KEYS OF THE MAJOR MODE.	REJECTED HOMOGENEOUS TONICS OF THE KEYS OF THE MAJOR MODE.
Do, C natural....The seven natural notes.....	.....Has no homogeneous tonic.
Sol, G natural....1 ♯; fa—F.....	.....Idem.
Ré, D natural.....2 ♯; fa, do—F, C.....	.....Idem.
La, A natural.....3 ♯; fa, do, sol—F, C, G.....	.....Idem.
Mi, E natural.....4 ♯; fa, do, sol, ré—F, C, G, D.....	.....Idem.
Si, B natural.....5 ♯; fa, do, sol, ré, la—F, C, G, D, A.....	Do, C flat.....7 ♭.
Fa, F sharp .....6 ♯; fa, do, sol, ré, la, mi—F, C, G, D, A, E.....	Sol, G flat.....6 ♭.
Fa, F natural.....1 ♭; si—B.....	Mi, E sharp....The three first ♭, si, mi, la—B, E, A—are there sharpened; and the four first ♯, fa, do, sol, ré—F, C, G, D—are doubly sharpened.
Si, B flat.....2 ♭; si, mi—B, E.....	La, A sharp ....The four first ♭, si, mi, la, ré—B, E, A, D—are there sharpened; and the three first ♯, fa, do, sol—F, C, G—are there doubly sharpened.
Mi, E flat.....3 ♭; si, mi, la—B, E, A.....	Ré, D sharp....The five first ♭, si, mi, la, ré, sol—B, E, A, D, G—are there sharpened; and the two first ♯, fa, do—F, C—are there doubly sharpened.
La, F flat.....4 ♭; si, mi, la, ré—B, E, A, D.....	Sol, G sharp....The six first ♭, si, mi, la, ré, sol, do—B, E, A, D, G, C—are there sharpened; and the first ♯, fa—F—is doubly sharpened.
Ré, D flat.....5 ♭; si, mi, la, ré, sol—B, E, A, D, G.....	Do, C sharp....7 ♯.

ADOPTED TONICS

OF THE KEYS OF THE MINOR MODE.

La, A natural.....Is not marked at the clef by any chromatic sign; but the sol—G—is accidentally sharpened, in order that the 7th or sensible may be $5\frac{1}{2}$ tones from the tonic..

Mi, E natural.....1 ♯; ré—D—accidentally ♯, as sensible .....

Si, B natural.....2 ♯; la—A—accidentally ♯, as sensible .....

Fa, F sharp.....3 ♯; mi—E—accidentally ♯, as sensible.....

Do, C sharp.....4 ♯; si—B—accidentally ♯, as sensible. .....

Sol, G sharp.....5 ♯; fa—F—as sensible, there becomes accidentally double sharp.....

Ré, D natural.....1 ♭; do—C—accidentally sharpened, as sensible....

Sol, G natural ....2 ♭; fa—F—accidentally sharpened, as sensible ....

Do, C natural.....3 ♭; si—B—accidentally natural, as sensible.....

Fa, F natural. ....4 ♭; mi—E—accidentally natural, as sensible.....

Si, B flat. .....5 ♭; la—A—accidentally natural, as sensible .....

Mi, E flat.....6 ♭; ré—D—accidentally natural, as sensible .....

REJECTED HOMOGENEOUS TONICS

OF THE KEYS OF THE MINOR MODE.

.....Has no homogeneous tonic.

.....Idem.

Do, C flat.....The four first ♯, fa, do, sol, ré—F, C, G, B—are flats; and the three first ♭, si, mi, la—B, E, A—are double flats; still the si, as sensible, takes accidentally only A♭, in order to be $5\frac{1}{2}$ tones from the tonic.

Sol, G flat.....The five first ♯, fa, do, sol, ré, la—F, C, G, D, A—are flats; and the two first ♭, si and mi, are double flats. Fa—F—as sensible, becomes accidentally natural.

Ré, D flat.....The six first ♯, fa, do, sol, ré, la, mi—F, C, G, D, A, E—are there ♭; and the first ♭, si—B—is double flat. Do—C—as sensible, becomes accidentally natural.

La, A flat.....7 ♭; sol—G—as sensible note, there becomes accidentally natural.

.....Has no homogeneous tonic.

.....Idem.

.....Idem.

Mi, E sharp ....The six first ♭, si, mi, la, ré, sol, do—B, E, A, D, G, C—are there ♯; and the first ♯ is there double sharp. Ré—D—sensible note, there becomes accidentally double sharp.

La, A sharp ....7 ♯; sol—G—as sensible, there becomes accidentally double sharp.

Ré, D sharp....6 ♯; do—C—as sensible, there becomes accidentally double sharp.

§ 45.—*Rules for the Formation of Keys.*

The most cursory examination of this table will be sufficient to render evident:

I. That in the keys with sharps, the tonic is always one degree above the last sharp placed at the clef in the major mode, and one degree below in the minor; and that in the keys with flats, it is always five degrees above, or four degrees below the last flat placed at the clef, in the major mode, and three degrees above, or six below, in the minor.

II. That both in the major mode and in the minor, the seventh, or leading note, or sensible, is always a semitone below the tonic.

III. That the application of every flat, natural, or sharp, to the first note of a part of a measure in any piece of music whatever, suddenly changes its key, and produces what is called *modulation*, if none but a chromatic sign be used, and *transition* or change of key when many are employed together. Transition is, therefore, a double, or triple, or occasionally even a quadruple modulation. For instance, if in a piece in Fa, F natural major, which has only one flat at the clef, the composer extraneously flattens the *Mi*, E, he passes from the key of *Fa*, F ♮ major, to that of *Si*, B flat major, the very moment he pronounces the *Mi*, E flat, and remains in this last key as long as the *Mi*, E, does not become natural again. He then has made a *modulation*. If, instead of the *Mi*, E, he flattens the *Sol*, G *flat*, he enters the key of *Ré*, D, flat major, so soon as he causes the *Sol*, G, to be heard. In the latter case, the composer makes a *transition*, because the introduction of the *Sol*, G♭, draws after it beside that of the *Si*, B♭, which was in the key of *Fa*, F ♮ major, that he has quitted that of the three other flats; *Mi*, E, *La*, A, *Ré*, D. (See Chapter III, § 12.)

In like manner, if, in a piece written in the key of *Ré*, D natural major, which bears two sharps at its signature, the composer introduces a *Sol*, G sharp, he gets, by *modulation*, into the key of *La*, A natural major; but if, instead of the *Sol*, G, he sharpen a *La*, A, he passes to the key of *Si*, B natural.

The rule to be followed, in all *modulation* and in all *transition*, is not to pass into any key unless its chord of seventh on the dominant contain some sounds or notes of the perfect chord of the relinquished key; which common notes serve as a link to bind the key which the composer leaves with that into which he enters, and form the *passage* from one to the other. When two keys do not possess this community of notes, they are incoherent; the passage

from one to the other is too abrupt, and on this account is discarded by the ear, which finds it false and condemns it, and is not employed except in those very few rare cases in which the genius, or rather the whim of the composer thinks it necessary to awaken a momentary attention by a cutting and forced emotion. Thus, for instance, if from the key of *Fa*, F *natural major*, he passes to that of *Si*, B *flat major*, or to that of *Ré*, D *flat major*, he makes a *good modulation* or a *good transition;* for the chord of seventh on the dominant of the key of *Si*, B♭ *major*, contains three of its notes: *Fa*, F♮, *La*, A♮, *Do*, C♮, common to the perfect chord of the key of *Fa*, F *natural major;* and the chord of seventh on the dominant of the key of *Ré*, D *flat major: La*, A♭, *Do*, C♮, *Mi*, E♭, *Sol*, G♭, contains one of its notes, the *Do*, C♮, equally common to the perfect chord of *Fa*, F♮ *major*. But if from the key of *Fa*, F *natural major*, he wished, by flattening the *Ré*, D, to pass to the key of *La*, A *natural major*, he would make a *bad transition;* because the chord of seventh on the dominant of the key of *La*, A *flat major*, *Mi*, E♭, *Sol*, G♮, *Si*, B♭, *Ré*, D♭, contains none of its notes common to the perfect chord of the key of *Fa*, F *natural major*.

Our reader will naturally conclude from the preceding observations, that a key is never entered, at least regularly, except by its chord of seventh on the dominant, or by the prolongation of one or more sounds belonging to this chord. The best method of announcing a new key, either major or minor, that is to say, of passing to it, is to give to the ear its second and its seventh, or leading note, or, at least, the last which we may designate with propriety as the advanced guard of the tonic.

The sweetest, the most pleasing, and, on this account, the most customary modulations are those to the fifth, or dominant; to the fourth, or sub-dominant; to the sixth, or sub-mediant, from the major to the minor; and lastly, to the third or mediant, from the minor to the major. Some authors have denominated them *the four true modulations.*

IV. That there is in each mode only one key, which has at the clef the same number of chromatic signs as its homogeneous; and that both in the major, and in the minor, this key (*Fa*, F *sharp*, homogeneous with *Sol*, G *flat;* and *Mi*, E *flat*, homogeneous with *Ré*, D sharp,) is precisely the most complicated; and we must add, that these two keys, although they occur in the list of adopted keys, are scarcely ever used.

V. That the greater part of the rejected keys, homogeneous with the adopted ones, cannot be formed without the aid of double

sharps and double flats, the only effect of which is to change the names of the notes; and that they present, by means of useless multiplicity of chromatic signs with which they are loaded, entirely the same result, and absolutely the same series of sounds as that contained in the homogeneous keys, which are far more simple and easy, and in which the chromatic signs leave to the notes the names which properly belong to them.

VI. That these rejected homogeneous keys are the basis of the enharmonic genus of which we treated, Chap. IV. §§ 29 and 30, and form, as it were, an union of keys constituting this enharmonism, which, considered as a particular genus or system of composition, is not less contrary to reason than to good taste.

VII. Finally, that the five keys which have no homogeneous in the major mode, are precisely those which have none in the minor; that of the notes or sounds, tonics of these five keys, the first, *Do*, C natural, is the fundamental sound of the scale of nature, the only one perfectly simple, the type and model of every diatonic scale, and, if we may be allowed the expression, the natural representative of the major mode; that, of the four other sounds, *Ré*, *Sol*, *La*, *Mi*, (D, G, A, E), the three first have no homogeneous, except through the medium of a double sharp or double flat, which is tantamount to having none; and the fourth, *Mi*, E, has none but by means of a double sharp or a simple flat; and, at length, that one of these four other sounds, *La*, A, is to the minor mode almost what *Do*, C, is to the major; for, the scale of which it is the tonic, needs nothing to be the type of the minor mode, but the accidental alteration necessary to determine the intonation of the seventh or sensible in all the keys of this mode.

§ 46.—*Passage from the Major to the Minor, and vice versâ.*

In assimilating the signature of each of the five keys (by the word *signature* is understood the union of the chromatic signs borne by a key at the clef) in the major mode to that which it bears in the minor mode, as follows:

Major mode—Do, C—(no chromatic sign)...Sol, G, 1♯...Ré, D, 2♯...La, A, 3♯...Mi, E, 4♯;

Minor mode—Do, C, 3♭. .Sol, G, 2♭...Ré, D♭...La, A, (no chromatic sign)...Mi, E, 1♯;

It is observable, that each key has in the minor mode three flats more, or three sharps less, than in the major mode; whence the following rules are easily deduced:—

I. In order to pass from a major key with sharps to its minor, it is necessary to deduct three; and to pass from the major key with flats to its minor, it is necessary to add three.

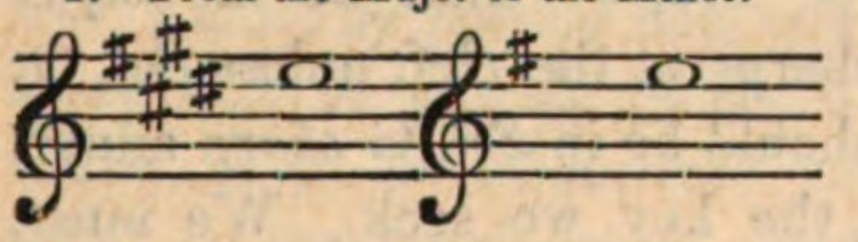
II. In order to pass from a minor key with flats to its major, it is necessary to deduct three; and to pass from a minor key with sharps to its major, it is necessary to add three.

III. In order to deduct from the clef three sharps in the clef of *Sol*, G natural major, which has only one, or in that of *Ré*, D natural major, which has only two, it is necessary, in the first instance, to suppress in the former the sharp at the clef, and to substitute for it two flats; and in the latter, the two sharps, and to substitute one flat in their stead.

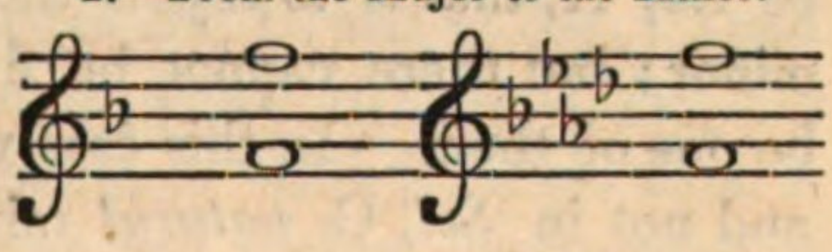
IV. In order to deduct from the clef three flats in the key of *Ré*, D natural minor, which has only one, or in that of minor *Sol*, G natural, which has but two, it is necessary, in the first place, to suppress in the former the flat at the clef, and to substitute for it two sharps; and, in the latter, the two flats at the clef, and to substitute one sharp in its place.

A few examples will suffice to render these rules perfectly clear.

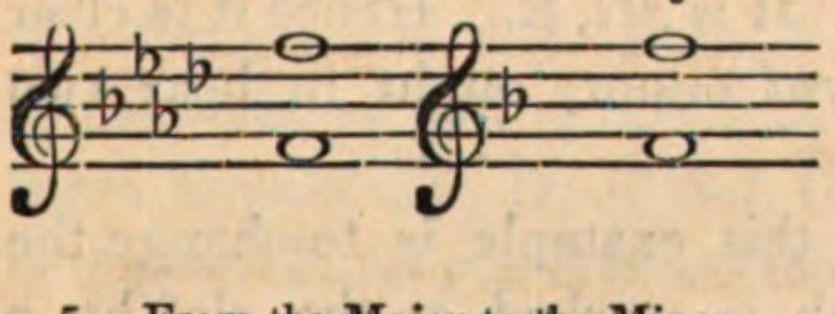
1.—From the Major to the Minor.



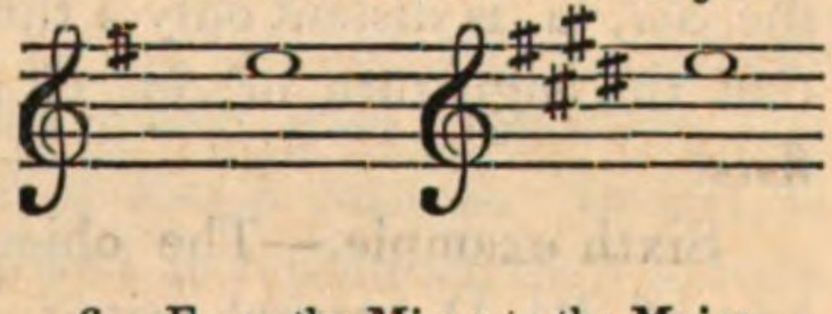
2.—From the Major to the Minor.



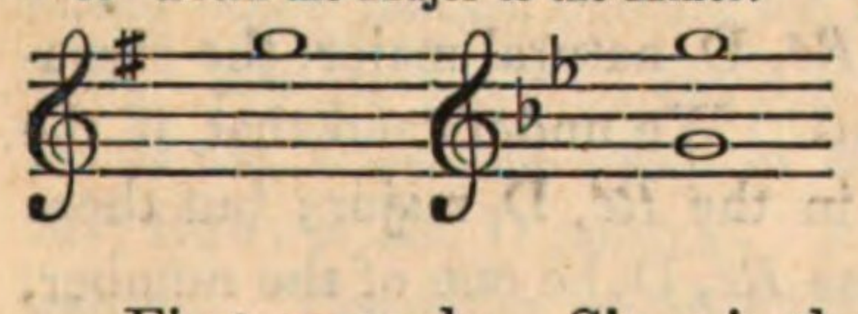
3.—From the Minor to the Major.



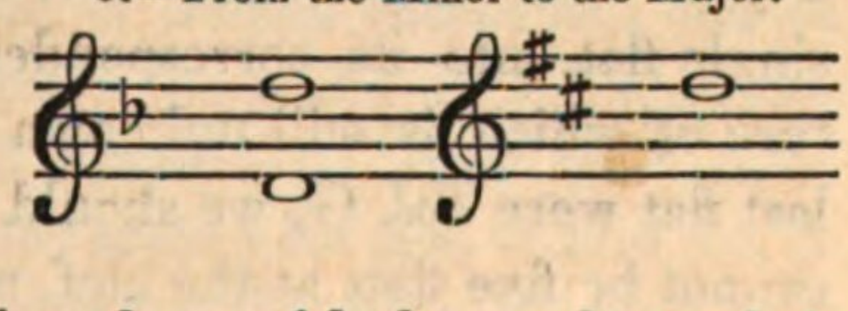
4.—From the Minor to the Major.



5.—From the Major to the Minor.



6.—From the Minor to the Major.



First example.—Since in the minor keys with sharps the tonic is always one degree below the last, it is obvious that, in order to produce the tonic of *Mi*, E minor, the last sharp ought to be *Fa*, F. Now, as when there is only one sharp at the clef, it is *Fa*, F, it follows, that to be in *Mi*, E minor, it is requisite to remove three sharps from the signature of *Mi*, E major, which has four.

Second example.—Since in the minor keys with flats the tonic is invariably either three degrees above or six below the last, it is

evident that, to produce the tonic of *Fa*, F minor, it is indispensable that the last flat should be *Ré*, D. Now, in order that the last flat may be *Ré*, D, there must be four flats at the clef; let three be added to the signature of *Fa*, F major, which has but one.

Third example.—Since in the major keys with flats the tonic is always five degrees above or four degrees below the last flat, it is apparent that there is only *Si*, B, which can be at the fifth or fourth of *Fa*, F. The last flat, therefore, ought to be *Si*, B; that is to say, there ought only to be one of them at the clef. Then let three be taken from the signature of *Fa*, F natural minor, when the object is to pass to *Fa*, F natural major.

Fourth example.—Since in all the major keys with sharps the tonic is one degree above the last, it is evident that, in order to have the tonic of *Mi*, E natural major, the last sharp must be *Ré*, D. Now, the last sharp cannot be *Ré*, unless there be four; it becomes necessary, therefore, to add three to the signature of *Mi*, E natural minor, which bears but one.

Fifth example.—We wish here to pass from *Sol*, G natural major, which bears a sharp at the clef, to its minor, of the signature of which we are still ignorant. We conceive that if the last sharp be *La*, A, that is to say, if there be five, we shall be in *Sol*, G minor; but there cannot be five sharps at the clef, unless *Sol*, G, be one of them. In this case we should be in *Sol*, G *sharp* minor, and not in *Sol*, G *natural* minor, the key we seek. We must, therefore, have recourse to the flats. What is the one from which the *Sol*, G, is distant only a third? It is *Mi*, E. Hence it is clear that the signature of *Sol*, G *natural* minor, ought to bear two flats.

Sixth example.—The object in this example is to change the key of *Ré*, D natural minor, which is marked at the clef by a single flat, into its correspondent *Ré*, D natural major, the signature of which is still unknown to us. We understand that, if the last flat were *Sol*, G, we should be in the *Ré*, D major; but there cannot be five flats at the clef, unless *Ré*, D, be one of the number, in which case we should be in *Ré*, D *flat* major, and not in *Ré*, D *natural*, the key we seek. Consequently, we are obliged to fly to the sharps; and since the tonic we want is *Ré*, D, and ought to be found one degree above the last sharp, this last sharp ought to be *Do*, C. The signature of *Ré*, D natural, ought, therefore, to be composed of two sharps.

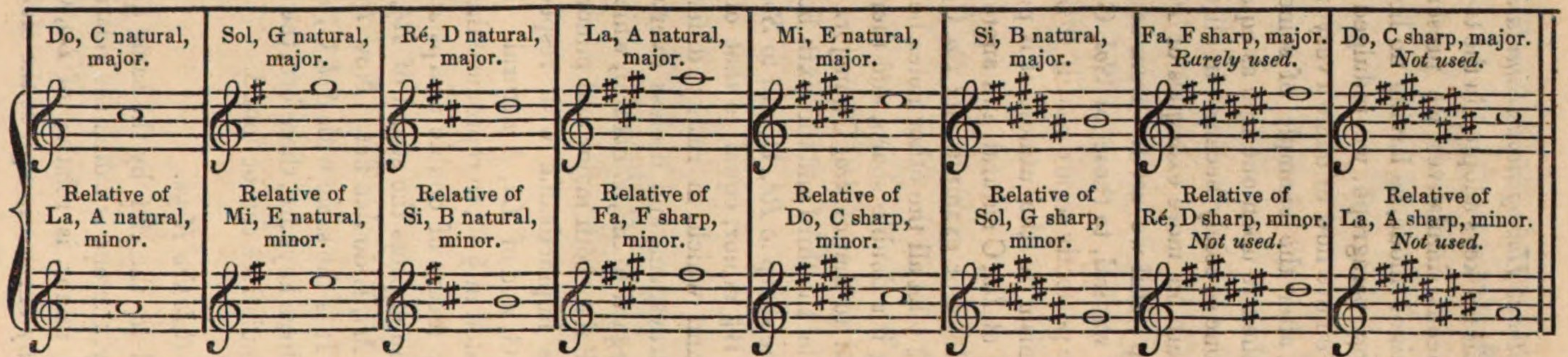
§ 47.—*Sounds of Keys without Homogeneous Simulatives.*

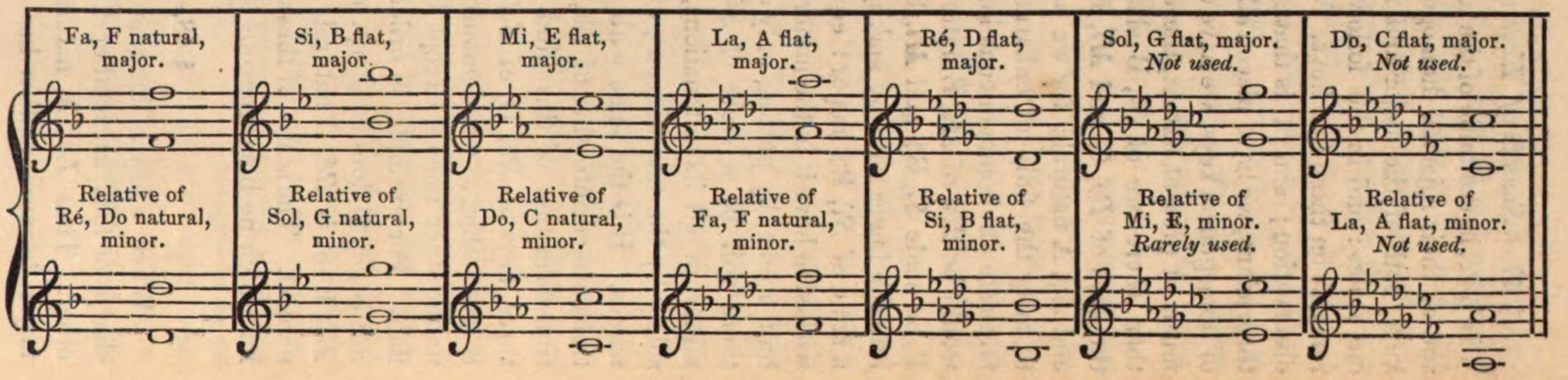
In § 42, in the table of the tonics of keys adopted in the two modes, and of their rejected homogeneous simulatives, we presented five keys, both of the major and minor mode, as having no homogeneous scales: and in the following paragraph, we indulged in a few remarks on these five keys. We have now to make a very important observation; and it is that if, after the example of some learned theoricians, we have placed all the five upon one line as equally void of homogeneal keys, we have done so solely because, in all engraved music at present extant, there are no more examples of *Fa*, F flat, than there are of *Si*, B sharp; still we are far from assimilating the keys of *Do*, C, and *Mi*, E natural, to those of *Sol*, G, *Ré*, D, and *La*, A natural; for we are perfectly aware that if it be wished to carry the folly of enharmonism to the utmost, it is possible to fabricate an homogeneous key of *Do*, C natural, and another which would be that of *Mi*, E natural. For example: let *Do*, C, and *Fa*, F, be made *Si*, B♯ and *Mi*, E♯; let all the other notes be changed into the lower note by making it a double sharp, and there will be a scale of *Si*, B♯ major: equal to that of *Do*, C♮ major. If it be wished to have it in the minor, let the third and the sixth be lowered half a tone, by putting only one sharp to *Ré*, D, and to *Sol*, G, and there will be a scale of *Si*, B♯ minor, equal to that of *Do*, C♮ minor, in all its intonations, and which, in reality, differs from it solely by the mischievous, extravagant, and useless overturning of names. It is the same with regard to *Mi*, E natural, which may be transformed into that of *Fa*, F flat, both major and minor; but all transformation of this kind is impracticable with respect to the three keys of *Ré*, D, of *Sol*, G, and of *La*, A natural. In fact, it is impossible, as was demonstrated in § 43, to reproduce their sounds under other names, except by means of double sharps and double flats. For example, in order to express the sound of *Ré*, D, there needs *Do*, C double sharp, or *Mi*, E double flat. Now *Do*, C+, or *Mi*, E♭♭, is *Ré*, D natural. It is the same with *Sol*, G, and *La*, A natural. The scales of these three keys are, therefore, the only ones for which no homogeneous simulatives can be found.

§ 48.—*Relative Keys.*

When a key is designated at the clef by the same quantity of sharps or flats as another key, the one is called the relative of the other. Thus *La*, A natural minor, is relative of *Do*, C natural major, because neither has any chromatic sign at the clef. *La*, A

natural major, is relative of *Fa*, F♯ minor, because both are designated at the clef by three sharps; and *Fa*, F natural major, is relative of *Ré*, D natural minor, because they are both marked at the clef by a single flat. The following table will present at one view all the relative keys, and, consequently, a complete list of the keys of the two modes.





It is clear that, both in the major and minor mode, of the two last keys, either with sharps or with flats, that is to say, of the eight last, six are never used on any occasion, and the two others very seldom. Another remark naturally arises from the inspection of this table, which is, that when there is more than one flat at the clef, the penultimate is always the tonic of the major modes, and its the sixth, of the minor mode. (§ 49). We stated, at the end of § 38, that the quality of the seventh, or sensible, or leading note, is not fixed at the clef in the minor mode, as it is in the major mode; for, in all the minor keys, it depends upon an accidental alterative sign, and we added that this peculiarity required explanation. The table of the tonics of keys adopted in the two modes, which the reader met with in paragraph 42, appears to us to have furnished him with a part of the necessary information on this head. In order to make him fully master of this subject, we shall now present him with a general table of the scales in use in the two modes; a table which that of the preceding paragraph, and the perusal of this chapter, have rendered him as capable of forming as ourselves; but which he will, perhaps, not be sorry to find ready made, especially as we shall accompany it with a few remarks which he will not look upon as useless.

A GENERAL TABLE OF THE SCALES IN USE IN THE MAJOR MODE.

Signature of the Keys.	Key-note, or Tonic.	Second.	Third, or Mediant.	Fourth, or Subdominant.	Fifth, or Dominant,	Sixth.	Seventh, or Sensible.	Octave.
Do, C natural.								
Sol, G natural.								
Ré, D natural.								
La, A natural.								
Mi, E natural.								
Si, B natural.								
Fa, F sharp, rarely used.								
Fa, F natural.								
Si, B flat.								
Mi, E flat.								
La, A flat.								
Ré, D flat.								
Sol, G flat, not used.								
Do, C sharp, totally unusual.								
Do, C flat, totally unusual.								

A GENERAL TABLE OF THE SCALES IN USE IN THE MINOR MODE.

Signature of the Keys.	Key-note, or Tonic.	Second.	Third, or Mediant.	Fourth, or Subdominant.	Fifth, or Dominant.	Sixth.	Seventh, or Sensible.	Octave.
La, A natural.								
Mi, E natural.								
Si, B natural.								
Fa, F sharp.								
Do, C sharp.								
Sol, G sharp.								
Ré, D sharp, not used.								
Ré, D natural.								
Sol, G natural.								
Do, C natural.								
Fa, F natural.								
Si, B flat.								
Mi, E flat, rarely used.								
La, A sharp, totally un usual.								
La, A flat, totally unu sual.								

Theory of the leading or sensible note in the minor mode.—A careful examination of this Table, and the application which we solicit our reader to make of it to the rules laid down in § 38, will show him that in the minor mode, not less than in the major, the distance of the seventh from the tonic is always five tones and a half, and that it acquires this distance solely through the medium of an accidental alterative sign, which raises it a semitone. The reason why this alterative sign ought to be accidental, and not fixed, is, 1st. That if it were placed at the clef, the sharps or flats could not have that invariable progression which they ought always to preserve, as we stated in Chap. III. § 12; and 2ndly. that, in some instances, sharps and flats would be seen together at the clef, an incongruity that cannot be allowed to exist. In the key of *Si*, B natural minor, for example, the *La*, A, is accidentally sharpened. The progression of the sharps would be altogether misdirected if this *La*, A, were sharpened at the clef, for the progression gives for the third sharp *Sol*, G, and not *La*, A. Consequently, to mark this key, only two sharps can be placed at the clef. The key of *Re*, D natural minor, would present at the clef a sharp and flat; that of *Sol*, G natural minor, would offer two flats by the side of a sharp; in *Do*, C natural minor, if the *Si*, B, did not become natural by an accidental natural, it would be at the same time flat and natural at the clef, or otherwise the order of the flats would be interverted; for without the *Si*, B, the two first flats would be, in this case, *Mi*, E, and *La*, A, which cannot be. We trust that we have sufficiently explained the peculiarity to which we alluded at the end of the paragraph 38: the reader may, however, enlarge upon these explanations by applying to all the keys of the minor mode the arguments of which we have just given him an example, as applying to a few.

§ 50.—*Method of distinguishing a Major Key from its Relative, and vice versâ.*

We must allow, that, notwithstanding the numerous means of discriminating between the two modes which the reader has met with in § § 39, 40, 43, 44, 45, and 49, it may still be difficult for him to distinguish a major key from its relative, and *vice versâ*. Taking, to support our argument, the first signature which our pen shall chance to trace, that of two sharps at the clef, for example, we shall ask our reader what key it indicates? He will answer immediately that of *Re*, D *natural major*, or *Si*, B *natural minor*. Right: but which of those two? In vain will he know that the

major third and sixth constitute the major mode, and that the minor third and sixth constitute the minor mode; and in vain will an attentive examination of the general table of keys have taught that,—

1. The third of the tonic of a major key is always the fifth of the tonic of the minor key its relative.

2. The sixth of the tonic of a major key is always the tonic of the minor key its relative.

3. The seventh of the tonic of a major key is always the second of the minor key its relative.

4. In the keys major by sharps, the leading or sensible note is always the last sharp placed at the clef; and in the keys major by flats, it is always natural, except that of *Do*, C♭, not used.

5. In the keys minor by sharps, the sensible note is expressed merely by means of a stronger sharp, or double sharp; and in the keys minor by flats, simply by a sharp or a natural, alike accidental.

In vain will he know that a perfect chord is composed of the tonic, of the third, and the fifth; and that a piece of music ought always to begin with one of the three notes of the perfect chord. The knowledge of these different rules will not enable him to decide whether it is in the major key, or in the minor, its relative; because they are not sufficient to determine the Tonic, and because it is impossible to decide precisely, without knowing it, what key it is that is sought for. In fact, according to the proposed example of two sharps at the clef, he will say: if it is the key of *Re*, D *natural major*, the third is *Fa*, F♯, and the sixth *Si*, B♮; but if it is the key of *Si*, B *natural minor*, he will equally find in it both the *Fa*, F♯, which is its fifth, and the *Si*, B natural, which is its tonic. If it is the key of *Re*, D *natural major*, he will add the *Do*, C♯, as the sensible note: bootless conclusion! the *Do*, C, is not less sharp in *Si*, B *natural minor*, than it is in *Re*, D *natural major*. If it is the key of *Re*, D *natural major*, our reader will still observe, the piece ought to commence with *Re*, D natural, or *Fa*, F sharp, or with *La*, A natural; and if it is the key of *Si*, B *natural minor*, it ought to begin with *Si*, B natural, with *Re*, D natural, or with *Fa*, F sharp: there he is correct. But if the piece commences with *Re*, D natural, or *Fa*, F sharp, in what key is it? Our reader will be sadly perplexed to determine this point: we will extricate him from his dilemma. What is the note, he will ask himself, of the perfect chord of one of the two keys which does not form a part of the perfect chord of the other? His instantaneous reply will be, that *La*, A natural, is in the perfect

chord of the key of *Re*, D *natural major*, and is not in that of the key of *Si*, B *natural minor ;* and, on the other hand, that *Si*, B, is in the perfect chord of this last key, and does not occur in that of *Re*, D *natural*. Now, the same way that in a tragedy or comedy the three first scenes ought to give an insight into the plot, so in every piece of music ought the three first bars to be an introduction to the key. Thus, in the two keys of which we are speaking, the presence of *La*, A, or *Si*, B, in the three first bars, will be sufficient to determine the key. If the piece is merely a melody, *La*, A, or *Si*, B, will be found at no great distance from a *Re*, D, or a *Fa*, F ; if the piece is harmonized, *La*, A, or *Si*, B, will invariably be on the same chord with these two notes.

There is another method which the study of the general table of scales might have laid open to our reader, and which we shall reduce to a rule :

General Rule.—" The fifth of the tonic of the major key is the sensible or leading note of the minor key, which is varied half a tone by an accidental alterative sign."

This rule alone will be sufficient to determine in what key we are; in fact, the very moment we are aware of a necessary difference, we are capable of determining the tonic, and the third, and the sixth, and consequently the key. Let us return to our example. Supposing it to be the key of *Re*, D *natural major*, the fifth will be *La*, A natural ; but, allowing it to be that of *Si*, B *natural minor*, in this case the *La*, A, will be sharp, and will be the seventh or sensible note. Now, the undeviating presence or absence of a sharp before *La*, A, will enable us to decide whether this note is fifth or seventh, and consequently which is its tonic, which are the third and sixth of this last, and finally, which is the key.

Another method of knowing in what key a piece of music is written, which method is usually taught to scholars, and to which they generally have recourse, is to find out the last note of the piece, which ought always to be the tonic. It is true that a piece frequently ends with the tonic, the third, and the fifth, at the same time. So also in the two keys under consideration, if the piece were to terminate with *Si*, and *Re*, a beginner might doubt whether it was in *Si*, B *natural minor*, or in *Re*, D *natural major ;* but as we have already said, his doubts will vanish, if he reflect that since the three notes of the perfect chord of *Re*, D *natural major*, are *Re*, D natural, *Fa*, F sharp, and *La*, A natural, and those of the perfect chord of *Si*, B *natural minor*, are *Si*, B natural, *Re*, D natural, and *Fa*, F sharp, and the presence of *Si*

or of *La*, is sufficient of itself to show him whether it is in *Si*, B *minor*, or in *Re*, D major. Moreover, the tonic is always the lowest note of the final chord. It is evident, therefore, that the perfect chord constitutes the mode, and that its presence is forced; for the notes, whether united or following one another in quick succession, ought to be found not less at the end than at the beginning of the piece.

CHAPTER VI.

PRINCIPAL RULES OF THE THEORY OF CHORDS.

§ 51.—*Chords—Consonant Chords.*

Chords are the union of several sounds executed at the same time. They are divided into two classes; consonant chords or *concords*, and dissonant chords or *discords*. (See § 36, Chap. IV.)

Consonant chords are those which contain consonant intervals only; that is to say, which are composed solely of consonances. Dissonant chords are those in which are to be found one or more dissonant intervals.

The class of consonant chords is divided into two kinds, each of which is subdivided into various sorts.

The two kinds of consonant chords are; 1, the perfect or common chord*; 2, the inversion of the perfect chord.

The different sorts into which the perfect chord is subdivided, are:—

1. The perfect chord major. It is composed of the tonic, the third or mediant, and the fifth or dominant, forming two conjoined thirds, the first major, the second minor; as, for example, *Do*, C natural, *Mi*, E natural, *Sol*, G natural. When a chord is a progression of thirds, its gravest note is called the *generative sound* of this chord.

2dly. The perfect chord minor. It is composed of the same elements as the perfect chord major; tonic, mediant, and dominant; but with this difference, that of the two thirds formed by these three notes, the first ought to be minor, and the second major; as, for example, *La*, A natural, *Do*, C natural, *Mi*, E natural; or *Do*, C natural, *Mi*, E flat, *Sol*, G natural.

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* Also called the *Harmonic Triad*.

3dly. The chord of tenth or twelfth on the tonic. This chord reverts, according to the notes of which it is composed, to one of the two preceding ones; for the tenth is nothing but the third, and the twelfth nothing but the fifth; and if the fifteenth be added, there will be a repetition of the octave.

§ 52.—*Inversions of the Perfect Chord.*

The different sorts into which the inverted perfect chord is subdivided, are:

1st. The chord of the sixth. It is composed of a third minor and sixth minor, in the inversion of the perfect major chord; as, for example, *Mi*, E natural, *Sol*, G natural, *Do*, C natural: or of a major third and sixth, in the inversion of the perfect minor chord; as, for example, *Mi*, E flat, *Sol*, G natural, *Do*, C natural. It is evident that this chord still contains the same elements as the perfect chord, but that the third or mediant here becomes the gravest note; that the fifth or dominant becomes the intermediate note; and that the principal note or tonic ceases to be so in order to become the most acute.

2dly. The chord of *fourth and sixth.* Formed likewise of the same elements as all the chords we have been analyzing: it differs from them in the order of the collocation of these elements, which, in altering their proportions, changes their nature. This chord is composed of an unaltered fourth and of a major sixth in the inversion of the perfect major chord; as, for example, *Sol*, G natural, *Do*, C natural, *Mi*, E flat; or of an unaltered fourth and minor sixth in that of the perfect minor chord. Example: *Sol*, G natural, *Do*, C natural, *Mi*, E flat. It is clear that the dominant here becomes the gravest note, that the principal note becomes intermediate, and that the mediant takes the place of the dominant.

We may conclude from these examples, 1st. That a chord is inverted every time its principal note is not placed at the bass. 2dly. That in the first inversion or position there is one third from the fundamental note to the bass. 3dly. That in the second position there is one fifth from the fundamental note to the bass. 4thly. We shall add that there is a third inversion in use: it is when there is a seventh from the fundamental note to the bass; but, in this case, the chord belongs to the class of dissonant chords.

The perfect major chord is placed chiefly, 1st. on the tonic; 2dly, on the subdominant of the major mode; 3dly, on the dominant of the same mode; 4thly, on the dominant of the minor mode; and 5thly, on the sixth note of the same mode.

The minor perfect chord is placed chiefly, 1st, on the tonic of the minor mode; 2dly, on the fourth note of the same mode.

In the major mode, the minor perfect chord is placed upon the second, third, and sixth notes; as, for instance: *Re*, D natural, *Fa*, F natural, *La*, A natural, = *Mi*, E natural, *Sol*, G natural, *Si*, B natural, = *La*, A natural, *Do*, C natural, *Mi*, E natural.

These three chords are minor by their very nature, for they have only a tone and a half from their generator to the third; but, nevertheless, they belong to the major mode; for the notes *Si*, B, *Mi*, E, *La*, A, are natural therein, and we are in the key of *Do*, C.

§ 53.—*Dissonant Chords.*

The class of Dissonant Chords is divided into five kinds, each of which is also divided into various sorts.

The five kinds of dissonant chords are, 1st. the chords of second and those of seventh, which may be called *essential dissonants:* 2dly. the inversions of chords of seventh: 3dly. their combinations: 4thly. the imperfect chords: 5thly. the extreme sharp chords: all chords that may be denominated *accidental dissonants.*

§ 54.—*Chords of Second.*

The chords of second are those which are composed of a second, or in which one occurs. It is to be understood that they are of three sorts, since there are three sorts of seconds; minor, major, and extreme sharp. The third inversion of each sort of chord of seventh will present one of them. Thus the chords of third and fourth, or fourth and fifth, of fifth and sixth, are all dissonants, since they all enclose one second; and a second cannot form a part of the perfect chord; tonic third, and fifth; or, third, fifth, and octave.

§ 55.—*Chords of Seventh.*

There are likewise three sorts of chords of seventh; the first is called *seventh on the dominant*, because it is placed on the fifth. It is practised in both modes; for example: *Sol*, G, *Si*, B, *Re*, D, *Fa*, F, = *Mi*, E, *Sol*, G sharp, *Si*, B, *Re*, D. The second is called *seventh on the sensible*; it is placed on the sensible of the major mode, and is practised only therein; *Si*, B, *Re*, D, *Fa*, F, *La*, A. The third, which is called *imperfect or diminished seventh*, is practised only in the minor mode, and is also placed on the sensible of it. Example: *Si*, B, *Re*, D, *Fa*, F, *La*, A flat.

§ 56.—*Chord of Seventh on the Dominant.*

The chord of *seventh on the dominant* is composed of third major, of unaltered fifth, and of minor seventh. There are three positions or inversions of it. In the first, the principal note, that is to say, the dominant of the key, becomes the most acute note, and the first intermediate note becomes the gravest. Example: *Si*, B, *Re*, D, *Fa*, F, *Sol*, G. It is composed of minor third imperfect, minor fifth, and sixth. In the second inversion, the second intermediate note becomes the gravest, and the principal note becomes the second intermediate. Example: *Re*, D, *Fa*, F, *Sol*, G, *Si*, B. It is composed of minor third, unaltered fourth, and major sixth; and is called *chord of sixth sensible.* In the third inversion, the most acute note becomes the gravest; the others follow their order without alteration. Example: *Fa*, F, *Sol*, G, *Si*, B, *Re*, D. It is composed of second major, extreme sharp fourth or tritone, and major sixth, and is called *chord of tritone.*

The falling of a dissonant chord on a consonant one, which follows, is called the *resolution* of that dissonant chord.

The chord of *seventh on the dominant* makes its resolution on the tonic, which produces a rest of harmony called *perfect cadence.* (See § 62, Art. VII and XXVI.)

§ 57.—*Chord of Seventh on the Sensible.*

The chord of *seventh on the sensible* is composed of third minor, of imperfect fifth, and minor seventh; its effect is far more agreeable when the third is suppressed. It has, like the chord of seventh on the dominant, three inversions or positions, which follow the same order. The first, *Re*, D, *Fa*, F, *La*, A, *Si*, B, is composed of minor third, unaltered fifth, and major sixth, and is named *the chord of fifth and sixth sensible.* The second, *Fa*, F, *La*, A, *Si*, B, *Re*, D, is composed of third major, of extreme sharp fourth, and major sixth, and is called *chord of tritone with major third.* The third, *La*, A, *Si*, B, *Ré*, D, *Fa*, F, is composed of major second, unaltered fourth, and minor sixth. It is called *chord of second.*

§ 58.—*Chord of Diminished Seventh.*

The chord of *diminished seventh* is composed of minor third, imperfect fifth, and imperfect seventh, which make three minor thirds. Of its three inversions or positions, which follow the same order, and have the same notes as the chord of seventh on the sensible, excepting that *La*, A, is flat, the first is composed of minor

third, imperfect fifth, and major sixth, and is called *chord of imperfect fifth and of sixth sensible.* The second is composed of minor third, extreme sharp fourth, and major sixth, and is named *chord of tritone with minor third.* The third is composed of extreme sharp second, extreme sharp fourth, and major sixth, and is named *chord of extreme sharp second.*

The chord of *seventh on the sensible*, and that of *diminished seventh*, make, like that of seventh on the dominant, their resolution on the tonic. These three chords have three notes in common, which may be placed alternately upon each of these notes.

The similarity of these three chords proves that they have the same origin, and the same generative sound; that of the *seventh on the dominant.*

§ 59.—*Chord of Ninth on the Dominant.*

From the combination of the seventh on the dominant with the seventh on the sensible, or with the diminished seventh, arises a chord which is called *major ninth on the dominant*, or *minor ninth on the dominant;* accordingly as the ninth, which constitutes a part of it, is major or minor. It is placed on the dominant, and is composed of third major, of perfect fifth, of minor seventh, and of ninth either major or minor. Example: *Sol*, G, *Si*, B, *Re*, D, *Fa*, F, *La*, A—*Sol*, G, *Si*, B, *Re*, D, *Fa*, F, *La*, A flat.

This chord makes its resolution on the tonic, as do likewise its three inversions, which take place at the bass; the first, *Si*, B, the second, *Re*, D, and the third, *Fa*, F. The second is less used than the two others.

§ 60.—*Diminished Chords.*

By *diminished*, or *imperfect*, or *lesser chords*, are understood those which are composed of a diminished interval, or which contain one. Thus, two conjunct minor thirds form a diminished chord, because it contains an imperfect or diminished fifth: *Do*, C♯—*Mi*, E—*Sol*, G, for example; or *Si*, B—*Re*, D—*Fa*, F—are two chords which are each composed of two minor thirds, and of which the two extreme notes are a diminished fifth.

Of all the diminished chords, that of fifth is the least dissonant, not to say the most perfect. In fact, it is composed of two minor thirds, and consequently contains twice the most perfect of the intervals; and, like the perfect chords, it is formed of third and fifth; but it cannot be denominated *perfect*, because its fifth is diminished; and no chord either diminished or extreme sharp can be perfect*.

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* See Prolegomena, §§ 11, 27, 30, 45, 49, 50, 53, to 57, 60 and 61; and the word HARMONIC ROOT, in the *Analytical Index.*

Still the chord of diminished fifth may be used to make a momentary rest before the complete and final rest, which can only be effected by the perfect chord.

The chord of *diminished fifth* is placed upon the sensible or leading note of the major mode. Example: *Si*, B,—*Re*, D,—*Fa*, F; and upon the second note of the minor mode: Example: *Re*, D,—*Fa*, F,—*La*, A♭.

The first inversion of the chord of *diminished fifth*, *Re*, D,—*Fa*, F,—*Si*, B, is composed of minor third and of major sixth; and the second, *Fa*, F,—*Si*, B,—*Re*, D, of extreme sharp fourth and major sixth.

§ 61.—*Extreme Sharp Chords.*

The chords called *extreme sharp*, or *superfluous*, or *greater* chords, are those which are composed of an extreme sharp interval, or which contain one. For example: two conjunct major thirds form an extreme sharp chord, because they contain a superfluous or extreme sharp fifth, as *Do*, C—*Mi*, E—*Sol*, G♯.

Although composed of third and fifth, like the perfect chords and like the diminished fifth, the *extreme sharp fifth* is far less pleasing, and, we may say, much more dissonant than the latter. The major thirds, of which it is formed, are not such consonant elements in themselves as the minor thirds. So, also, the *extreme sharp fifth*, which they produce, is not calculated, like the *diminished fifth*, to form even a momentary rest.

Each of the two inversions of the chord of *extreme sharp fifth* contains major third and minor sixth. Now, it is well known that every chord of third and sixth is eminently dissonant, unless the third and sixth be both major or both minor.

The extreme sharp chords generally have a character of dissonance more marked than that possessed by the diminished chords.

§ 62.—*General Notions.*

This paragraph, the last of this Chapter and of this elementary exposition of the Fundamental Principles of Music, will contain a few general notions suitable to the conclusion.

Rule for distinguishing a consonant Chord from a dissonant one.

I. In order to know whether a chord which is not perfect be consonant or dissonant, one must place under this chord the third or the fifth inferior to its lowest note. If the addition of this third or this fifth render it a chord of third, fifth, or octave, or of tonic, third, and fifth, it is consonant; if not, it is dissonant.

Nature of the Inversions of the Chords of Seventh and of those of Ninth.

II. There exists a remarkable difference between the changes or inversions of the chords of seventh and those of the chords of ninth. In the first, the note which becomes principal, or root-note, is immediately followed by the same notes or note by which it was followed in the direct chord; and that of those which preceded it come after those which followed it. In the second, on the contrary, the note which becomes principal, or root-note, is immediately followed by the note or notes by which it was preceded in the direct chord—that is to say, one of the intermedial notes becomes the lowest, and all the others remain in their places. The inversions, therefore, of the chord of major ninth on the dominant, for example: Sol, G—*Si*, B—*Re*, D—*Fa*, F—La, A—are not: *Si*, B—*Re*, D—*Fa*, F—*La*, A—*Sol*, G, = or *Re*, D—*Fa*, F—*La*, A—*Sol*, G—*Si*, B, &c.; but they are: Si, B—*Sol*, G—*Re*, D—*Fa*, F—La, A = *Re*, D—*Sol*, G—*Si*, B—*Fa*, F—*La*, A = Fa, F—*Sol*, G—*Si*, B—*Re*, D—La, A.

Accented and unaccented Parts of Time.

III. Measures or Bars are divided into various *divisions* or *parts of time*.—(See § 11, 3dly. Chap. II.) These *divisions* or *parts of time*, although equal in duration, are not so in the musical rhythm: the former are accented or strong, and called the *Thesis*; the latter, unaccented or weak, and called *Arsis**. In the measures of *common time*, divided into four or into two *parts of time*, the accented parts are the odd ones. In the measures of *triple time*, the first part is always the accented or strong one. The rhythmical strength is occasionally prolonged on the second; but the third is always unaccented or weak.

Passing Notes.

IV. As the strong part of a measure is that most remarked by the ear, the weak part is merely a passage to arrive at it; and hence the notes of the weak part have received the name of *Pass-*

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* The words *Thesis* and *Arsis*, from the Greek Θέσις, Τιθήμι, and Αρσις, signify—the former, *Position, Settlement, I establish, I settle*; and the latter, *Elevation*; and have been adopted in the English language to express the accented or strong, and the unaccented or weak part of time of each measure. See, in Dr. Busby's *Dictionary of Music*, the word *Arsis*; his *Grammar of Music*, p. 70; and Mr. Engelbach's English translation of Frederick Schneider's *Elements of Musical Harmony and Composition*, § 126.

ing Notes. The dissonant fourth, the tritone, the minor fifth, and the other dissonances—all intervals which serve to pass from one consonance to another—are, therefore, in reality only passing notes.

Passing Notes filling the void of the intervals which occur between notes proceeding by disjunct degrees, as, for example, of those of third, of fourth, of fifth, &c. serve as a support, a resting-place, or connecting chain to pass with greater facility from the one to the other. They afford the means of varying the melody by trains of notes or roulades composed alternately of notes of the common chord, and of those which separate them. These roulades are also called *Passages.* Supposing the notes of the melody to be *Do*, C—*Mi*, E—*Sol*, G—*Si*, B♭, they follow by irregular degrees; but, in connecting them each with the note of the scale which immediately follows it, the passage from one to the other will be effected in a manner much more agreeable to the ear, and then will be formed the *passage: Do*, C—*Re*, D—*Mi*, E—*Fa*, F—*Sol*, G—*La*, A—*Si*, B♭.

Passing Notes are foreign to the chords, on which they only glide without becoming identified with them. They ought always to follow by conjunct degrees, both in ascending and in descending.

Motions.

V. When of two parts one is stationary, and the other is progressive in every sense, their motion is denominated the *oblique* or *side motion;* when two parts ascend or descend in the same time, they produce the *direct* or *similar* motion; and, finally, when one part ascends while the other descends, they form the *contrary motion**.

Preparation.

VI. To prepare a dissonance is to give to the ear as consonant the interval which in the following chord will become dissonant. The preparation ought always to equal in value, and consequently in length, the duration of the dissonance.

Resolution of Dissonances.

VII. To resolve or save a dissonance is to lower it a whole tone or half tone†.

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* Some theorists admit of a fourth motion, which they call parallel, and which should be that of two parts following the same degree. That supposed motion of one part with reference to another is rather an immobility, or no motion at all.—(General de Virués.)

† The learned and justly celebrated Dr. Busby says, in his Grammar of Music,

In the dissonant chord or second, it is the lower note which ought to descend; and in those of fourth and seventh, it is the superior.

Part of Time proper for Preparation.

VIII. Dissonances ought to be prepared on the weak or unaccented part of Time, and heard on the strong or accented part; but when various dissonances succeed one another, they cannot but be heard in succession on both parts of the Time. What is to be observed in this case is to prepare the first dissonance on an unaccented part of Time, and to resolve the last on a strong or accented part.

Natural and artificial Dissonances.

IX. Those are called *natural dissonances* which are to be met with in the chords where two sounds may be found at a distance of an extreme sharp fourth, or of a diminished fifth. Dissonances forming part of any chord where this is not the case take the title of *artificial.*

Motion of Dissonances.

X. Natural dissonances may do without preparation; but no dissonances can dispense with resolution.

As dissonances are merely intermedial chords to go from one consonance to another, they cannot be assumed nor quitted, except by a conjunct motion or degree. It is therefore evident that a dissonance ought always to be placed between two consonances.

Indispensable Preparations.

XI. The sound which articulates the dissonance of *second,* or that of *seventh,* or that of *fourth,* of *ninth,* or of *eleventh,* ought never to be heard without having been prepared in the preceding chord.

Resolution of Consonances.

XII. To make a consonance, which is separated from the dominant or the tonic only by a tone or a semitone, reach the one or the other, is what is called to resolve a consonance. No con-

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p. 205, "*The preparation of a discord* is the previous introduction of the discordant note or notes of a present chord or combination; if in the preceding chord or combination there were any discordancy, it did not consist of the present discordant note or notes. The *percussion of a discord* is the striking or sounding it after it has been prepared. The *resolution of a discord* is the conversion of the discordant note or notes of a present chord into a concording part or parts of a succeeding chord or combination, whether that succeeding chord or combination be a concord or a discord."

sonance whatever can be resolved on a perfect consonance; and, in most cases, a succession of perfect consonances ought not to be written nor used, except by contrary or oblique motion; forasmuch as the employment of the similar motion would produce a progression of fifths and octaves, either uttered or concealed; faults of which we shall proceed to speak.

Fault of Fifths.

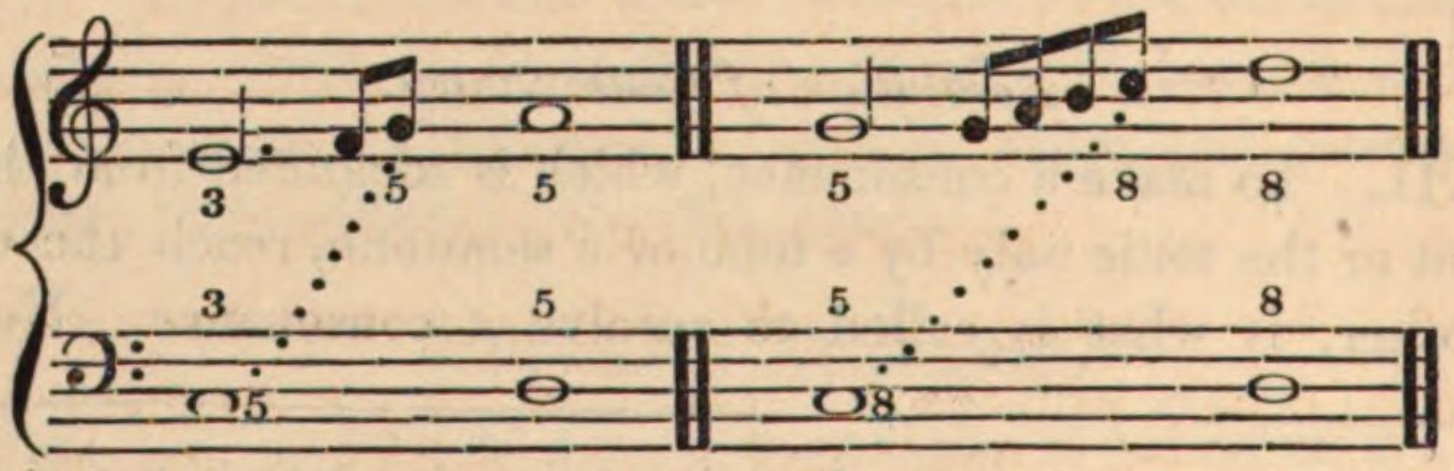
XIII. The *fault* of *fifths* consists in the succession of two perfect chords by conjunct degrees, either in ascending or in descending; as, for example, when the chord *Do*, C, *Mi*, E, *Sol*, G, is followed by *Re*, D, *Fa*, F, *La*, A. When the fifths are intermedial, the fault is just as great; and it is not less so when it is produced by two parts at the distance of a fifth one from the other, following by similar motion on another interval of fifth.

Fault of Octaves.

XIV. A succession of octaves in a single part produces what is called the *fault* of *octaves* when there is an intermediate note; and this fault is not less when the octaves are made by two parts, and whether there be another intermediate part or note. But when all the parts make octaves together, they are permitted, because then they produce unison.

Fault of concealed Fifths and Octaves.

XV. When two parts proceed in their progress to the interval of a fifth or of an octave, the similar motion cannot be employed; for there would be the fault of *concealed fifths* or *concealed octaves*, as in the following examples.



Succession of Fourths.

XVI. *Succession* of *fourths* are not admissible in harmony, unless the lower sixth be added.

Use of various Intervals allowed.

XVII. The concealed fifths and octaves, like the other suc-

cessions of perfect consonances, and particularly those of major thirds and minor sixths, prohibited in two parts, or in a single one, are tolerated in the intermediate parts when there are three or four parts; but then only between consonances.

Mutual Progression of Consonances.

XVIII. In recapitulation of the preceding rules, a succession of imperfect consonances is employed with the three motions: but from a consonance, either perfect or imperfect, it is incorrect to go upon a perfect consonance by the direct or similar motion; that is to say, it is improper and faulty to make two parts which constitute between them a fifth, an octave, a third, a sixth, or a fourth, descend or ascend at the same time on a fifth or an octave.

We shall throw more light on this important rule by borrowing from the learned Mr. Berton the following table.

Order in which the Consonances are employed.	Different trains that may be given to the progress of the Consonances between them.	Motion which the parts ought to have according to the nature of the Consonances.
From the perfect to the perfect,	or { from the octave to the fifth, / from the fifth to the octave,	by contrary or oblique motion.
From the perfect to the imperfect,	or { from the octave to the third, / from the octave to the sixth, / from the fifth to the third, / from the fifth to the sixth,	by the three motions.
From the imperfect to the perfect,	or { from the third to the octave, / from the third to the fifth, / from the sixth to the octave, / from the sixth to the fifth,	by contrary or oblique motion.
From the imperfect to the imperfect,	or { from the third to the third, / from the third to the sixth, / from the sixth to the sixth, / from the sixth to the third,	by the three motions.

Progression of Intervals.

XIX. The necessity of facilitating intonation has given rise to rules of melody with respect to the distance which separates one sound from another. Thus, when, in ascent or in descent, one degree is made to approach another, the nature of their remoteness has been fixed, in the counterpoint of note for note, in the following manner.

The same part or the same voice may skip over the intervals of major and minor second, of major or minor third, of perfect fourth and fifth, of minor sixth, and of octave. All the extreme

sharp or diminished intervals, the major and minor fourths and fifths, the major sixth and seventh, have beeen prohibited, as offering only difficult and disagreeable intonations.

False Relation.

XX. The alteration of the intervals of octave, fifth, and fourth, (the nature of which does not admit of it) produces a fault called *false relation*. This fault is also committed whenever one part causes a natural note to be heard, whilst another part causes the same note to be sharpened.

But when two parts offer to the ear one and the same natural note, and one of the two parts *afterwards* causes it to be heard sharpened, there is in this case no false relation. Some authors have also given the name of *false relation* to the fault which arises when two parts, at a distance of major third, or minor sixth, the one from the other, proceed by similar motion on another interval of major third or minor sixth.

The reason why these successions of major thirds and of minor sixths, as well as those of fifths, have been proscribed, is, that when a key is once established, the ear becomes accustomed to it, and that key cannot be abandoned precipitately without offending it. Now, two perfect fifths, two major thirds, and two minor sixths, which are the inversion thereof, bespeak two different keys. This observation has sufficed to cause them to be rejected. The perfect fifth is one of all the intervals which declare the key with the greatest force.

Application of Articles XIII *to* XX *to passing Notes.*

XXI. The rules explained in the eight preceding paragraphs are applicable to *passing notes*, the same as if they formed a part of harmony.

Aptness of each Sound to receive the perfect Chord.

XXII. Each note and even sound of the scale is susceptible of the perfect chord*.

Succession of the perfect Chords.

XXIII. The perfect chords ought to succeed one another in such a manner that one, at least, of the notes of the chord which follows should form a part of that which precedes.

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* See Prolegomena, § § 28, 63, and 66; and, in the *Analytical Index*, the words MECHANISM OF MELODY.

Union of the perfect Chords.

XXIV. The best method of uniting the perfect chords is to prepare the fifths of them; that is to say, to introduce in the chord which *precedes*, the superior note of the fifth forming the chord which *follows*, or constituting a part of it.

Simple and Compound Harmony.

XXV. Harmony is divided into simple and compound. *Simple* or *Natural Harmony* comprehends all the chords which do not require preparation, and which are therefore composed of perfect chords only, and chords of the seventh, either on the dominant or on the sensible, or of the diminished seventh. *Compound* or *Artificial Harmony* is formed by the delay of one or more parts which prolong one or more sounds of a chord on the following chord*.

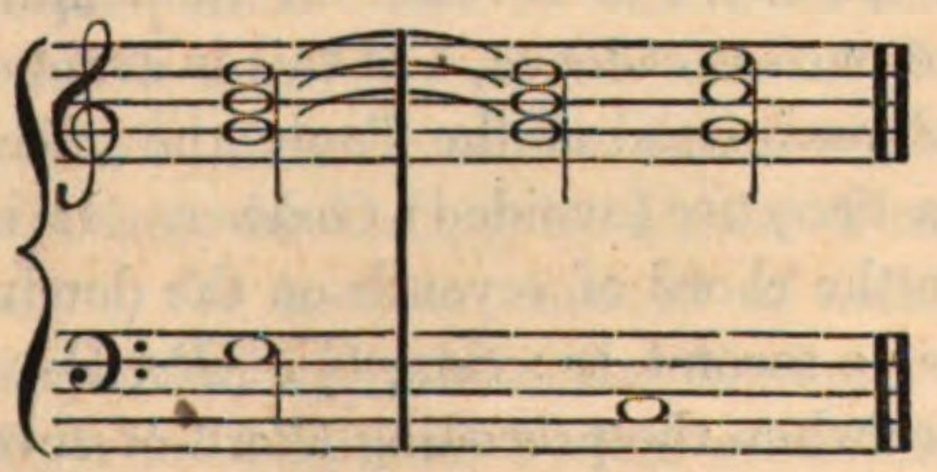
Cadences—Suspension.

XXVI. The fall of a preparatory chord upon a final chord has been hitherto denominated a *Cadence* or a *Close.* It is the termination of a musical phrase; it is invariably the resolution of a discord upon a concord.

The resolution of the chord of seventh on the dominant of the tonic, produces what is called a *perfect*, *authentic*, or *final* Cadence or Close.

The names have been granted to it through its essential and exclusive property of completely determining the key, and proving its authenticity, by always causing the leading note to be heard, and always resting on the Key-note or Tonic.

The perfect Cadence may be retarded. All the parts can then preserve the harmony heard on the point whence it sets out; whilst the bass, effecting its motion, causes the tonic to be heard. Example:



This example shows also what is a *suspension;* for as often as one or several sounds of a preceding chord are prolonged in the follow-

* See Prolegomena, § § 6, 7, and 29.

ing, by which means the natural course of the harmony is retarded, there is a *Suspension*. Here the three superior notes of the preceding chords are prolonged on the bass of the following, before passing to the sounds of this.

Every retardation is therefore a *Suspension*. Look in the alphabetical index for the words *retardation* and *analysis of the Typometre*.

The principal *Suspensions* are those of the third by the fourth; of the sixth by the seventh; and of the eighth by the ninth. This last reverts to that of the Tonic by the second.

The resolution of the chord of subdominant on the Tonic, or, in other words, the falling of the subdominant or fourth on the Tonic, produces what is termed a *plagal Cadence*.

The passage of the Tonic or of every chord to the dominant, on which it makes a momentary rest, is named *Cadence on the dominant*, or, *Semi-cadence*. This cadence merely *suspends* the musical sense.

Every fall of fifth in descending, or every rise of fourth in ascending, besides the resolution of the dominant on the Tonic, is called *imperfect cadence*. In the key of *Do*, C natural major, in imitation of the motion of the perfect cadence from *Sol*, G, to *Do*, C, the falls from *Do*, C, to *Fa*, F,—from *Fa*, F, to *Si*, B,—from *Si*, B, to *Mi*, E,—from *Mi*, E, to *La*, A,—from *La*, A, to *Re*, D,—and from *Re*, D, to *Sol*, G, form *imperfect Closes* or *Cadences*. It is in music what the *comma* is in writing, in the same manner as the *perfect cadence* is the musical point.

The ascension by one degree of the dominant to the submediant or sixth produces a cadence which is called *false* or *broken Cadence*. Thus, in the key of *Do*, C natural, it is the passage of *Sol*, G, to *La*, A. The learned Mr. Berton says that this cadence may be looked upon as the sign of exclamation in musical discourse.

When, after the chord of seventh on the dominant, the ear expects to hear the perfect cadence, and this is avoided by placing at the bass the mediant instead of the Tonic, the effect is to produce what is called a *deceptive* (avoided) *Cadence*. It is said to be *by consonance* when the chord of seventh on the dominant which precedes it contains no second, as: Sol, G = *Re*, D—*Sol*, G—*Si*, B; and *by dissonance* when the preceding chord of seventh on the dominant contains one, as: Sol, G = *Re*, D—*Fa*, F—*Sol*, G—*Si*, B; or Sol, G = *Re*, D—*Fa*, F—*La*, A—*Si*, B.

As the mere inversion of the perfect chord changes the motion of the bass, and consequently prevents the cadence; that is to say,

produces a *deceptive* or avoided *Cadence*, the introduction in the perfect chord of a dissonance or of a foreign chromatic sign does more than prevent the cadence: it interrupts it harshly, for it changes the key. (See § 45, Obs. 3.) Every alteration of the final, or *cadential*, perfect chord produces then a *deceptive* (avoided) or an *interrupted Cadence*, and every interrupted cadence is therefore, with greater reason, deceptive. On this account, the generality of authors have confounded the one with the other; and, to say the truth, there is no great mischief in this ambiguity, since it is only a mistake in those names of which the reader has already seen in our preface the estimation in which we hold them, an estimation in which he cannot fail to participate himself, when he has perused the Geneuphonic Grammar. Still, for the honor of the ancient school in the steps of which these Elementary Chapters continue to tread, we will, filling up the outline we have just traced, explain the characteristic difference which really exists between the *deceptive*, or avoided, and the *interrupted* cadence.

As the smallest grain of sand thrown into the scale destroys its equilibrium, so does the slightest alteration of the perfect chord confuse the cadence, by *retarding*, *avoiding*, or *interrupting* it. In the deceptive, or avoided, and interrupted cadences, the starting place is the same as in the perfect cadence; it is always the chord of seventh on the dominant. It is only the direction which is changed. When the chord of seventh on the dominant is followed by the inversion of the perfect chord or its own, or, in a word, by a dissonance not foreign to the key, it is merely a *deceptive* (avoided) *Cadence*. But when it is followed by the chord of seventh on the dominant of another key, or by its own perfect chord altered by a foreign chromatic sign, or, in a word, by a dissonance foreign to the key, it is then an *interrupted Cadence*.

The *interrupted Cadence* is produced by adding the minor seventh to the major perfect chord on which the final rest ought to be established; that is to say, by considering the Tonic as a dominant bearing a seventh, which produces two sevenths on the dominant, one after another, descending by fifths. Thus, in the key of *Do*, C natural major, for instance, instead of making the perfect chord follow the chord of seventh on the dominant: *Sol*, G—*Si*, B —*Re*, D—*Fa*, F, it is succeeded by this other chord of seventh: *Do*, C♮—*Mi*, E♮—*Sol*, G♮—*Si*, B♭; and then there are two sevenths, *Sol*, G—*Fa*, F, and *Do*, C♮—*Si*, B♭, descending by fifths: the first on the *Si*, B, and the second on the *Mi*, E. In this case the *Do*, C, becomes the dominant of the key of *Fa*, F

natural major, in which the piece has been suddenly placed by the introduction of the *Si*, B flat.

According to the generality of authors, the perfect *Cadence* is likewise *interrupted* by placing after the chord of seventh on the dominant which announces the cadence another chord of seventh on the dominant, the generative sound of which is a third or a fourth below, a second or a third above that of the first. If after the chord of seventh on the dominant: *Sol*, G—*Si*, B—*Re*, D—*Fa*, F, of the key of *Do*, C natural major, which we will continue to take as our example, come the chord *Si*, B♮—*Re*, D♮—*Fa*, F♮—*Sol*, G♮, it is clear that the last will be merely an inversion of the preceding, consequently that there will be no change of key, and that there will be only a *deceptive* or avoided *Cadence*. If we change the *Sol*, G, into *La*, A, we shall have the chord of seventh on the dominant of one of the keys of *Mi*, E; and whether it be that of *Mi*, E natural major: *Si*, B♮—*Re*, D♯—*Fa*, F♯—*La*, A♮; that of *Mi*, E flat major: *Si*, B♭—*Re*, D♮—*Fa*, F♮—*La*, A♭; or, finally, that of *Mi*, E flat minor: *Si*, B♭—*Re*, D♭—*Fa*, F♮—*La*, A♭—there is in these three an *interrupted Cadence*. Now, whether the second chord be: *La*, A—*Do*, C—*Si*, E—*Sol*, G; or *Re*, D—*Fa*, F—*La*, A—*Do*, C; or *Mi*, E—*Sol*, G—*Si*, B—*Re*, D, the occurrence of a single chromatic sign before one of the sounds of this second chord will be sufficient to convince us that it has thrown us out of the key of *Do*, C; that it is that of seventh on the dominant of one of the keys of *Re*, D, of *Sol*, G, or of *La*, A; and, from this very circumstance, that it forms an *interrupted Cadence*.

A succession of *plagal*, *imperfect*, and *interrupted* cadences may be made; and in the minor mode the diminished seventh may be employed instead of the seventh on the dominant.

Connexion of Chords.

XXVII. Two chords, to be well connected, ought to form, by their principal notes, a third, a fourth, or a fifth in descending; or, which comes to the same thing, a sixth, a fifth, or a fourth in ascending.

Faults to be avoided.

XXVIII. When a piece is written in more than two parts, the fifth ought to be accompanied by the fourth, but never by the sixth. It is necessary, likewise, to avoid accompanying the key-note with the sixth and the mediant, as well as the sensible or leading note with the fifth.

Progression of the Bass.

XXIX. The fundamental bass of a discord ought to make with that of the following chord a fifth in descending, or a fourth in ascending.

The same.

XXX. When two chords have not a common fundamental note, the bass can ascend or descend only a semitone or a whole tone to reach the second chord. If it could not make this progression, it would be necessary to avoid the employment of the perfect fourth.

The same.

XXXI. When the note of the bass is common to two chords belonging to two different fundamental notes, which frequently happens, the bass ought to remain on the same degree.

Preparation of the Fourth in the Bass.

XXXII. The fourth at the bass ought always to be prepared by a common note, either by the bass or by a high part. In this latter case, the bass ought not to clear an interval greater than that of second to reach the fourth.

The preparation of fourth, immediately before a semi-cadence or a perfect cadence, may be dispensed with.

Pedale.

XXXIII. A sound prolonged at the bass, and on which chords foreign to it are made to pass, but which, in order to soften the effect of their clashing with this sound, ought to reproduce it from time to time, is what is called *Pedale*. As the pedale is ordinarily made at the lowest part, or *Baritono*, it is proper that the harmony placed above should be as distant from it as possible. Sometimes, however, a pedale may be transported into the interior harmony, and even to the acute, provided that the prolonged sound form a part of the following chord, and that, in the case where it would form a second or seventh with one of the notes of the said chord, it be separated from it by a consonant interval.

There are two sorts of pedales; one is made on the tonic, the other on the dominant. The first receives, by preference, the three chords of seventh (see § 56, and following ones); because, as they make all their resolution on the tonic, it happens that the sound of the pedale forms most frequently a part of the harmony. The second, which ought to commence with a *semi-cadence* and terminate

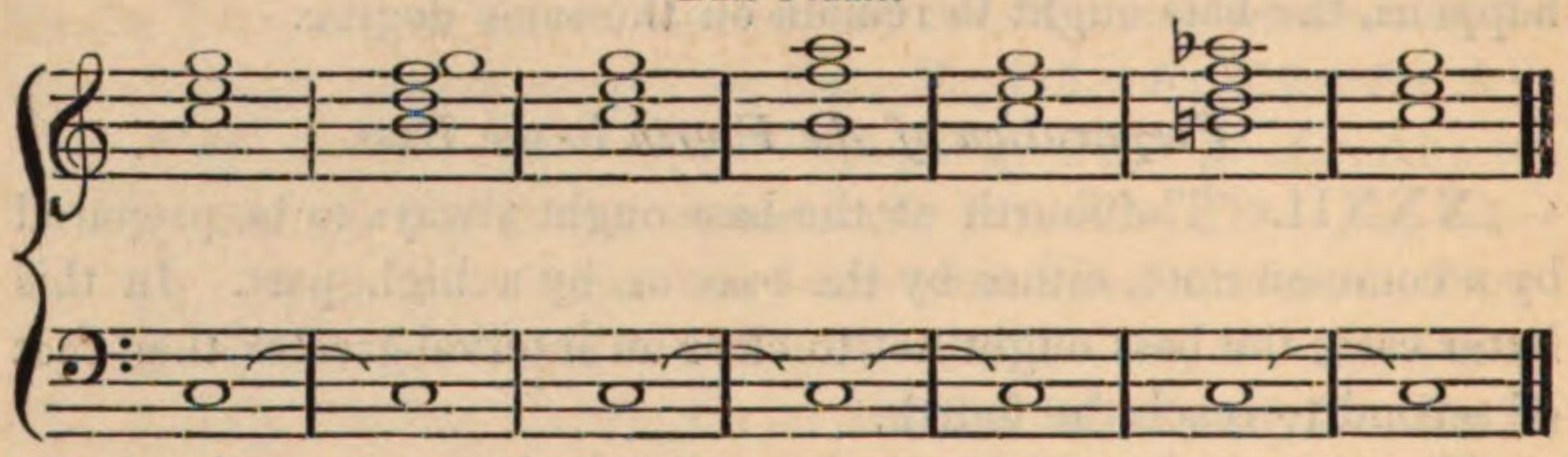
with a *cadence*, either *perfect* or *on the dominant*, possesses the faculty of receiving every succession, both of dissonances and consonances.

Modulation may be effected on the pedale, treating it sometimes as tonic and sometimes as dominant.

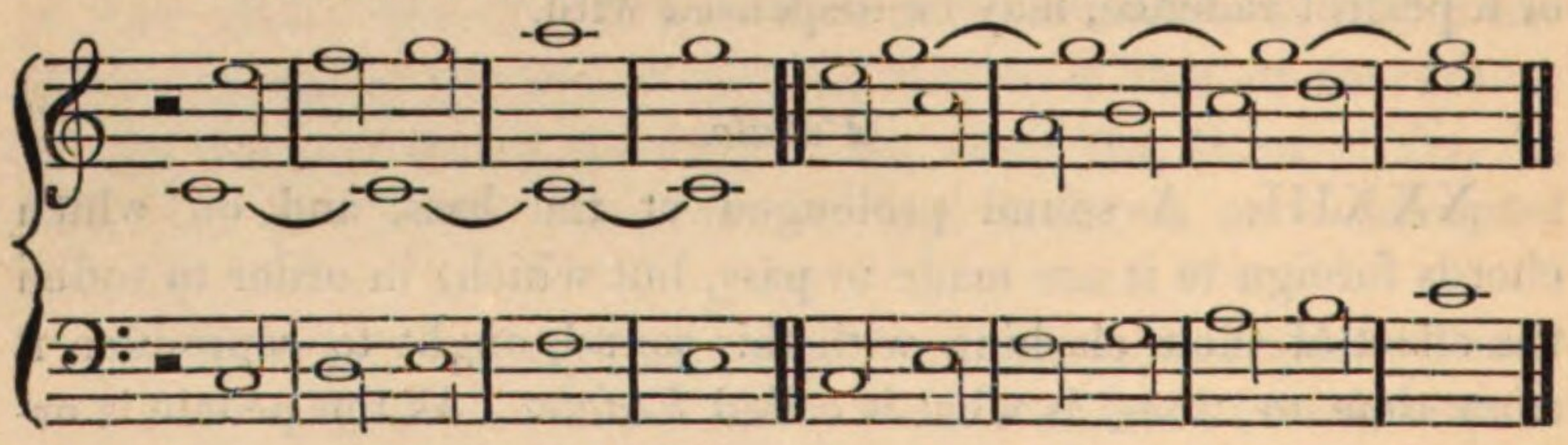
This musical agreement, one of the best adapted to attract attention and to produce effects of endless variety, replete with sublimity and rich in harmony, assumes the name of *Pedale* from the fact that, in the keyed instruments, as the pianoforte and organ, the *pedal*, or machine so called, acted upon by the foot, holds the note prolonged while the two hands wander diversely over the keys.

Here is an example of the different sorts of pedales.

Bass Pedale.



Intermediate Pedale. Treble Pedale.



Harmonic Progression.

XXXIV. The title of *harmonic march* or *progression* is given to the harmonic and regular reproduction, both in ascent and in descent, of a given formula which is called *model.*

The most regular connexion of the first chord of the progression with the last chord of the model, is that in which the fundamental bass proceeds by third, by fourth, or by fifth in descending.

The model ought always to terminate with a consonant chord. The dissonant chords which might occur in it ought always to have an exact and perfect resolution.

We might, to complete this exposition of the general principles of music, add other definitions and rules for the employment of

retardations, of prolongations which produce them, of suspensions, of alterations, of the numerical writing of the bass, and enter into a crowd of details relating to chords and enharmonic transitions; but these definitions, these rules, and these details would be perfectly useless to our reader, to whom we have submitted the six preceding chapters, with the sole view of enabling him to reap every advantage from the perusal of the Geneuphonic Grammar. We think that he may now commence it with perfect confidence, and, provided he be blessed with a moderate capacity, it will, we doubt not, raise him to a level with any theorist in the art, and render unnecessary the study of any other method.

END OF THE ELEMENTARY CHAPTERS.

PROLEGOMENA.

§ 1. A series of seven notes placed in the following order—*Do, Re, Mi, Fa, Sol, La, Si, Do, Re, Mi, Fa, Sol, La, Si, Do*—whatever be the note taken as the first, is called an HEPTACHORD, a GAMUT, or SCALE. If, after the seventh note, that chosen as first be repeated, the HEPTACHORD then receives the name of OCTAVE.

OCTAVISM is the utmost extent of repetition from a sound to its octave, both grave and acute.

§ 2. Any heptachord, gamut, or scale takes also the name of KEY, which principally applies to the alterative signs that are not or are wanted in the progression of the scale, and are placed immediately after the clef, with which they take the name of the SIGNATURE.

§ 3. The principal note in importance in any scale is the first, which gives to it its name, and is denominated the TONIC, or KEY-NOTE. The second note in importance is the THIRD, which is the true *Dominant*. The *third* in importance is the *fifth*, hitherto erroneously called the *Dominant*, to which title it could have no right, but under the pretext of its being above the third in the perfect chord, which is henceforth to be called the CADENCE; for the reason which will be, more than once, deduced in the course of this work. The fourth note in importance is the *seventh*, called the SENSIBLE, because it must always precede the tonic at the distance of a semitone. The sensible has the *second* for correlative; as the *third* has the *sixth*, with which it is invariably sympathetic. The *fourth* is the correlative of the *fifth*.

§ 4. Since the chord hitherto called *perfect*, and composed of the notes 1—3—5 of the heptachord, takes the name of *Cadence*; the chord of *seventh—sensible*, composed of the notes 2—4—5—7 of the heptachord, will henceforth be called the *Precadence*; and the chord of subdominant, composed of the notes 1—4—6 of the heptachord, which naturally follows the cadence, will take the name of *Transcadence*.

§ 5. When from the *tonic* to the seventh (unaltered from what it is according to the indication of the signature) any heptachord contains five tones and a half, as from *Do*, C, to *Si*, B, it is in the

major mode: when it contains but five, as from *La*, A; to *Sol*, G, it is in the minor mode. In the former case, there are two tones between the *tonic* and the *third;* four tones and a half between the *tonic* and the *sixth:* in the latter, there are but one tone and a half between the *tonic* and the *third*, and four between the *tonic* and the *sixth*. Hence the notes 3 and 6, and the intervals of *third* and *sixth*, are called MODIC; whilst, by opposition, the other notes and intervals are denominated IMMODIC. (See the *Rules drawn from the Observations of the Typometric Table.*)

§ 6. All the octaves, both grave and acute, of any perceptible sound, have in euphony, either melodic or harmonic, the same value as their denominative sound, and as the unison. The tri-octavism of the artificial perfect chord, produced by resonance, is the proof of this assertion; a proof confirmed by the ear.

§ 7. The immediate and natural consequence of the foregoing axiom is, that all the rules of harmony, all its combinations, must necessarily be contained within the narrow compass of one single octave of any scale whatever.

§ 8. As all the scales of the major mode keep the same distance, from their note 1 to their note 2, from their note 2 to their note 3, from their note 3 to their note 4, and so on respectively; and as the same respective parity of intervals, both consonant and dissonant, does exist in all the scales of the minor mode, it results from that respective identity, that is, the figures 1, 2, 3, 4, 5, 6, and 7 be given for surnames to the seven notes of every key, whatever be the mode; the combinations and the rules to be made and observed between those seven figures, viz. to be made and observed in the extent of one single heptachord, will be all the combinations and rules necessary in the science of harmony, counterpoint, and musical composition; all those even possible in music.

§ 9. From the perfect equality of all the keys of each mode, for the formation of consonances and dissonances, it results, that the key and the mode are indifferent in harmonic calculation and arrangements.

§ 10. The unison, the octave, and the fifth are no consonances.

§ 11. There are no imperfect consonances.

§ 12. ACUTENESS is the relation of one sound to another sound lower than itself in its own heptachord; as *Fa*, F, is acute as relates to *Do*, C, in the scale of *Do;* as *Do*, C, is acute as relates to *Fa*, F, in the scale of *Fa*.

§ 13. AMPHIBOPHONY is that sonorousness which is composed of sounds belonging exclusively to different keys.

§ 14. GENEUPHONY is the generation or cause of the agreeableness of melody.

§ 15. By the word HEPTACHORDIC will be understood all that which belongs to the seven sounds of any diatonic scale, or is found in them.

§ 16. By the words ETEROTONIC or ETEROGAMIC, the reader will understand that which belongs to another key, gamut, or scale; and by the word HOMOTONIC, that belonging to the same key, gamut, or scale.

§ 17. To that which is conceived or understood by the division of the *monochord* or tight string, the name of MONOCHORD relation has been ascribed.

§ 18. MONOSOUND has the same meaning as *unison*, and the same harmonic value as *octave*.

§ 19. MUSICAL EUPHONY is the opposite of CACOPHONY or disagreeable melody.

§ 20. PRECADENCIAL or PRETONIC, is that which belongs to the *precadence* preceding the tonic or key-note; and TRANSCADENCIAL, is that which belongs to the transcadence, or chord following the *tonic*, or the *perfect* chord, or the *cadence*.

§ 21. By RESONANTIC RELATION, shall be understood that which is produced by the resonance of the sonorous body confined within the limits of the octave; as the relation of major *third*, of *fifth*, of *seventh*, &c.

§ 22. SONOROUSNESS is that which affects the ear: sonorousness is to the ear what smell is to the nose, and taste is to the palate. As there are good and bad smells, so are there good and bad sonorousnesses.

§ 23. By TONIC SYSTEM must be understood the series of defined tones which are made use of in music; and which more especially are exhibited in their greatest extent on the best English pianofortes. The tonic system corresponds with the system of notation, which furnishes written signs for it.

§ 24. A TRIAD is the succession of the two thirds, of which is composed the *perfect* or *common* chord, either major or minor.

§ 25. The TRISOUND is the grand melo-harmonic TRIPLET. The first, fourth, and fifth sounds of the scale giving its typometrical bass.

§ 26. TYPOMETRE is the sole and universal formula observed by nature in that branch of musical movement called melody. It consists of the immediate succession of three sonorousnesses, called *cadence*, *transcadence*, and *precadence*.

§ 27. The only consonance is the *third.* The mediate or generative principle of Euphony is the *minor third;* it includes rules, and explains melody in all its duration, and harmony in its twofold state, *conjunction* and *reproduction.* The immediate and reproductive principle of Euphony is Diatonic POLYTONOGAMNISM existing in the space; that is to say, the capability of any perceivable sound of becoming the tonic sound and key-note of a diatonic scale in the two modes. By POLYTONOGAMNISM, therefore, must be understood the utmost extent of the diatonic scales of the two modes in different degrees of deepness or gravity.

§ 28. All possible sounds are tonic sounds; all possible chords are each of them the simultaneousness, therefore, of different sounds; consequently, every chord is a compound of as many tonics as it comprehends sounds.

§ 29. There is no compound harmony. All harmony is simple and natural.

§ 30. Every note which is not exclusively *third* is not consonant: it is therefore dissonant: it is always in the relation of *second* with one of the consonant notes.

§ 31. Consonances and dissonances are exclusively by the matter of harmony.

§ 32. Single and multiple chant (*melody* and *harmony*) always proceed by one of the four cadences; viz. *absolute, avoided, interrupted,* or *broken;* but the invention of the *typometre,* which simplifies every operation in harmony and musical composition, render henceforth useless the names of those cadences.

§ 33. As often as the chord of one time of the bar is prolonged on the following time, it operates upon one of the four cadences aforesaid: every stir or movement of the melody, therefore, is a cadence.

§ 34. The melody does not arise or proceed from the bass: on the contrary, it dictates the bass by requiring the accompaniment of two thirds, the gravest note of which is necessarily the *tonic* or note 1 of the scale actually reigning. There is, therefore, no other bass than the tonic. The bass is indifferently uttered either by the grave, the middle, or the acute parts, voices and instruments. The bass usually called *continued,* or *melodic,* or *singing* bass, is consequently neither more nor less than any one of the parts of the symphony, or multiple chant.

§ 35. The choice of the inversions of the intervals, viz. the election of the octave, at which every note is to be better placed for the purpose of musical effects, does not belong to the science of harmony, but to the genius of the composer exclusively.

§ 36. The movements of the bass, as well as those of the other parts are subordinate to that choice which does itself depend upon the composer's taste and his study of the partitions of the great masters.

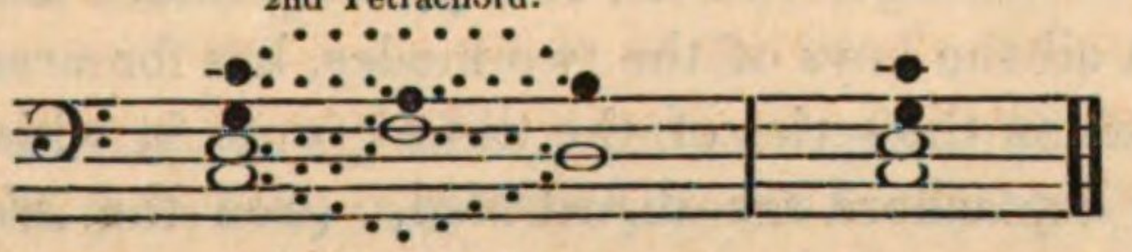
§ 37. Modulation is the provisional or momentary translation of the melody from one key to another, or from one mode to the other.

§ 38. As soon as, in the new key, two of its chords are uttered one after another, modulation ceases, because then there is declaration or fixation of the new key or of the new mode.

§ 39. To modulate, therefore, is not to change the key; it is merely to indicate fresh scales or key without establishing them: to change the key, consequently, is to articulate the seven sounds of the gamut of a new key by uttering its three consecutive chords; viz, the *cadence* 1, 3, 5; the *transcadence* 4, 6; and the *precadence* 2, 7. The tonic bass of which is in the key of *Do;* for instance, 1, *Do*, C; 4, *Fa*, F; 5, *Sol*, G.

§ 40. Every octave is composed of the union of two tetrachords, absolutely identical with respect to the succession of their intervals; viz. *first tetrachord; Do, Re, Mi, Fa. Second* tetrachord; *Sol, La, Si, Do.* The four notes or sounds of the second tetrachord are in consonance with the four notes or sounds of the first. Any one will have this proved by placing them under each other, the graver below, as follows:

2nd Tetrachord.

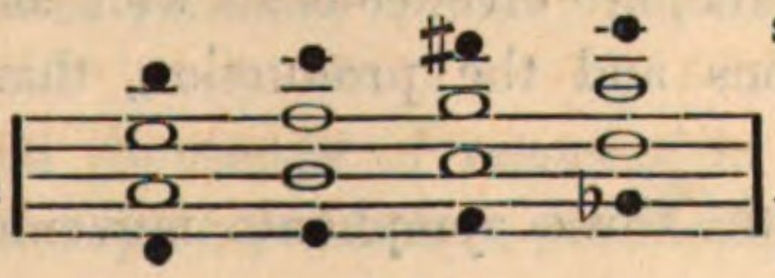


1st Tetrachord.

The propriety of harmonizing together inherent to the two tetrachords of one same scale, leads to another extremely curious observation, which is, that the first tetrachord of a scale taken as primitive may be considered as second tetrachord of an anterior scale, the tonic of which will be the note 4 of the primitive scale; and that the second tetrachord of that primitive scale may be considered as first tetrachord of a posterior scale, the tonic of which will be the note 5 of the scale chosen as primitive. This generation of scales or keys is thus exemplified—

Superior Gamut of *Sol*, G, 5.

Primitive Gamut of *Do*, C, 1



Inferior Gamut of *Fa*, F, 4.

and most clearly proves that the nearest as well as the most analogous scales to another, are those which have for tonics the notes 4 and 5 of that other scale taken as primitive, and of which they are the first derivations; and observe that those three tonics 1—4—5, are those of the harmonic groups of the primitive or central scale, as Do, C, 1—Fa, F, 4—Sol, G, 5, in the supposition of the scale of Do, C, being taken as primitive. Moreover, mark that the more the addition just alluded to of both inferior and superior tetrachords becomes increased, the relation between the newly derived scales and the primitive one becomes weaker and more distant in a rapid progression; and soon afterwards entirely vanishes; which causes the modulation to become the more unpleasant, and even at last intolerable, according to the lesser circumspection that is used in the choice of the scales into which the melody is intended to be transferred; which cannot be quickly done between remote scales without heaping preparatory dissonances in a manner at once uncouth, imperceivable, and obstreperous. (See the Table of *Heptachords*, and the *Observations, Explanations, and Rules* annexed to it.)

§ 41. The two extreme notes of each tetrachord give an absolute cadence; viz.

1st. Tetrachord, Do, C—Fa, F.
2nd. Tetrachord, Sol, G—Do, C.

§ 42. Every melody without exception follows this march, whatever be the change of mode, of key, or rhythm. Every melody, therefore, in all the keys of the two modes, has for accompaniment or harmonization the series of the three groups in which the seven notes of the heptachord are distributed. (See the *Melo-harmonic Typometre.*)

§ 43. As often as this order becomes interrupted, a change of key or of the mode necessarily takes place; and the new mode or key invades the same mould to continue to chalk in it the melody, until a fresh mode or key comes and succeeds to it by the same means.

§ 44. An absolute cadence cannot be final but on the first time of the bar.

§ 45. All the denominations hitherto given, all the differences attributed to the various chords by the ancient theories, and by those actually in force, are erroneous as well as useless; not less for the combinations and the production, than for the study of harmony.

The theory of the three symphonic movements; that of fifth

and octaves; that of the marches, of the singing bass, and of the three other melodies; that of inversions; that of preparations of the fugue; of thorough or fundamental bass; are all, and every one of them, entirely superfluous.

§ 46. Ressonance is a dissonant derivation, and is not a consonant principle.

The tonic sound, generator of ressonance, is itself a derivation or reproduction of dissonance.

The harmonic generator is that which has hitherto been called dissonance; it arises from destruction, and brings with it reproduction. The generation of harmony cannot arise from, or be subject to mathematical calculations, as it was erroneously believed from remote ages to our days.

§ 47. Dissonance never is cacophonic, nor artificial; it is no other than the double sonorousness of the two ends of an interval, smaller than the minor *third*; it is doubly euphonic.

§ 48. There is in music no other dissonance than the interval of *second*, whatever its extent may be; viz. enharmonic, chromatic, diatonic, major, minor, extreme sharp, diminished, or false; whatever be its octavism, its inversion, or its double gammic position.

§ 49. The TRITONE is the only twofold consonance, because it forms a double minor *third*.

The DOUBLE TRITONE is the only threefold musical consonance, because it contains three minor *thirds*. It is the aim and the complement of the harmony system of nature, as being at once both the generator and the generation of its own mode, exclusively. Whilst it does exist, unalterable is the mode, but not the key.

That truth, therefore, that "*every sound is a tonic*" (which truth will henceforth be expressed by the word POLYTONISM) leads to the primitiveness and to the supremacy of the minor mode; and consequently, the essential consonance, the original and purest chord, the *typomode* of nature, is the minor *third*.

§ 50. The major *third* is intrinsically a precadential, immodic, and eterogammic sonorousness, like the dissonance which makes a conjunction with it.

§ 51. Modulations are always made according to one same rule through one same process, and without any chord intermediate between the key to be left, and that which is to be entered into. That rule is not that of pleasing the ear; but does however always satisfy it.

In thousands and thousands of manners, in numberless ones, indeed, modulations may be presented, producing examples always

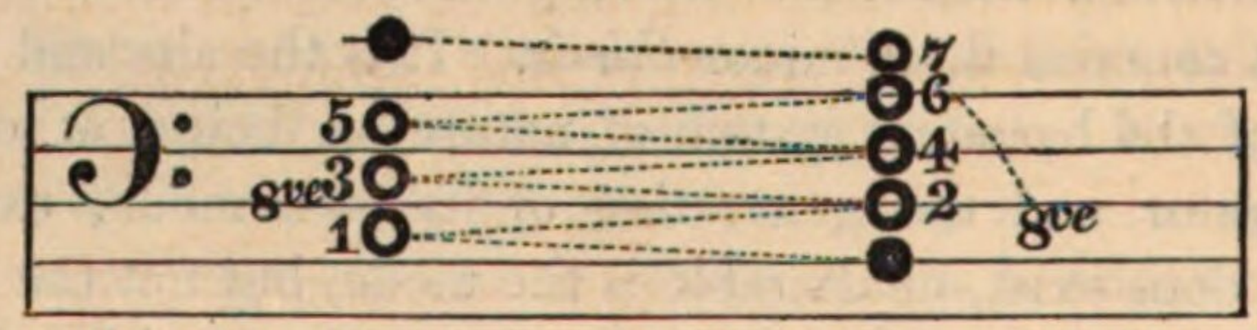
graphically different, and without a change of key taking place in the intermediate chord; and so all the models of modulations proposed from the number of 16 to that of 1052, by the different authors of *Treatises on Musical Composition*, are subject to, and accomplished through, that sole rule which has been unknowingly made use of as often as modulations have been effected through intermediate chords, whatever be the dissonances introduced in them.

§ 52. The distribution of the seven notes of the heptachord in three harmonic groups of *thirds*, viz. the *melo-harmonic typometre* escorted by the retinue of the foregoing axioms, is sufficient to an intelligent reader to give rise to the discovery of a great number of truths, and is the source of all musical rules, many of which have never yet been thought of, or the cause of which still remains unknown.

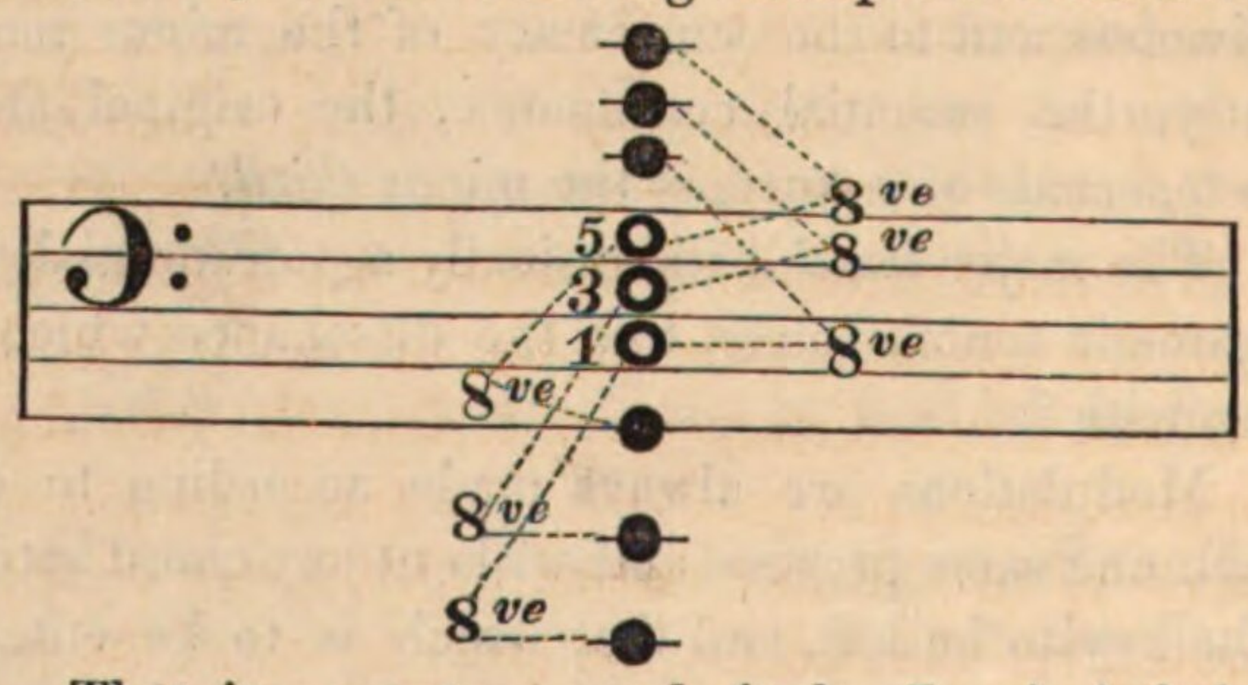
§ 53. Since there is no other consonance than the *third;* since every *second* is dissonant; since every *octave* is the same thing as its denominative note; it follows:

1st. That the first group of the harmonic distribution of the heptachord or typometre cannot be increased by the addition of any of the other four notes of the heptachord, 2—4—5—7, because they all are in interval of *second* with one of the notes of the first group or *cadence*, 1—3—5:

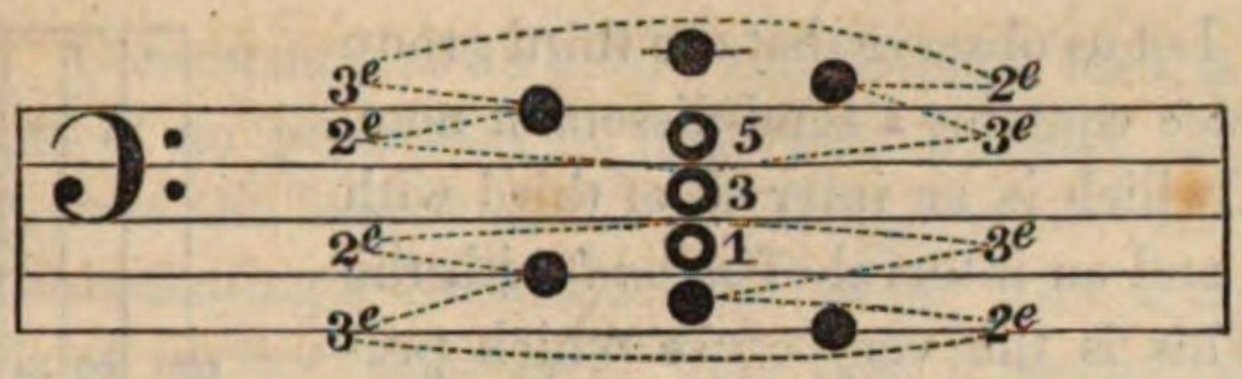
Seconds.



2ndly. That the first group can be increased only by the addition of its octaves; as the following example demonstrates:

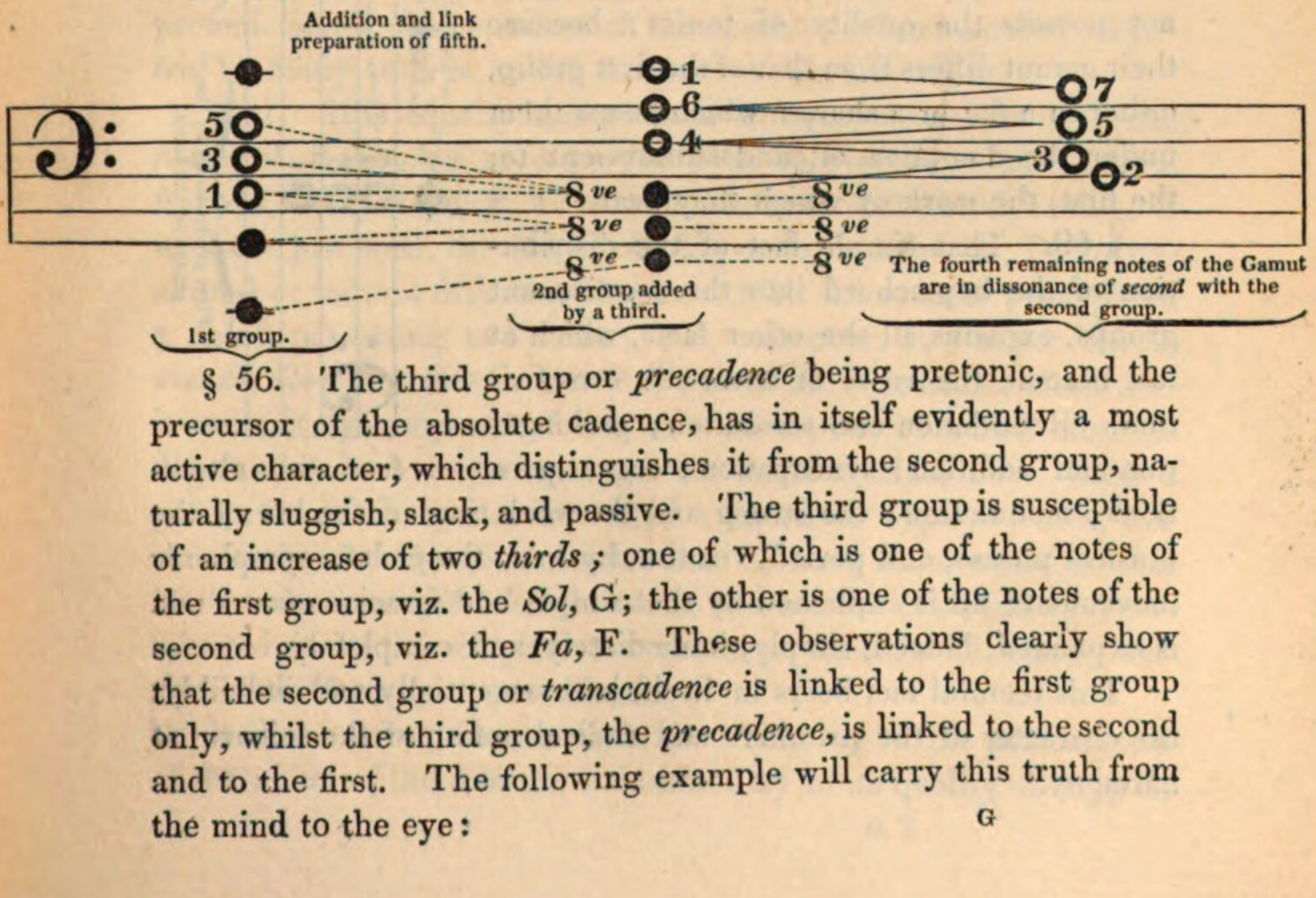


3rdly. That it cannot even admit the *La*, A, inferior third to *Do*, C; nor the *Si*, B, superior third to *Sol*, G; because these two notes are in interval of *second*, the *La*, A, with the *Sol*, G; and the *Si*, B, with the *Do*, C; which is patentized in this example:



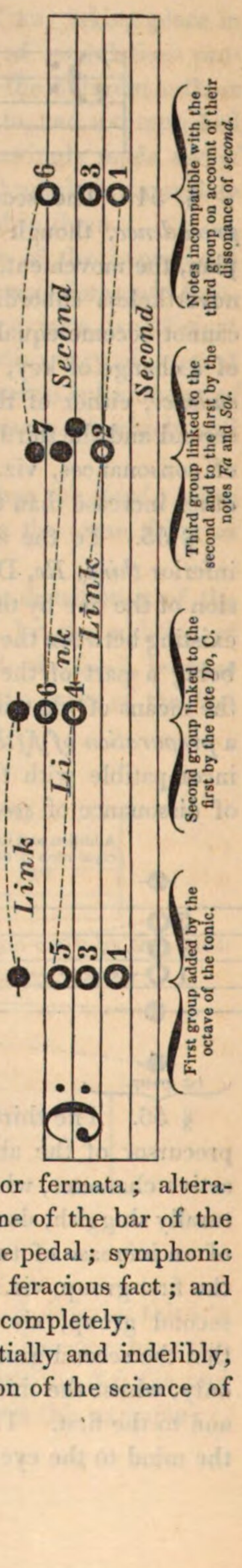
§. 54. The second group or *transcadence*, and the third or *precadence*, though indispensable auxiliaries to the first for the plan, the movement, the form, and the rhythm of the melody, are nevertheless subordinate to it; so much the more so, that they cannot become equal to it but after it has ceased to exist by means of a change of key, which raises them to the rank of first group or *cadence*, either of the key of *Fa*, F, or of that of *Sol*, G. The second and the third group are, therefore, susceptible of an increase of consonances, viz. of *thirds*, whilst the first group rejects any other increase than that of its own octaves.

§ 55. To the second group or *transcadence* can be added an inferior *third*, *Re*, D, or a superior *third*, *Do*, C; but to the exclusion of the one by the other, on account of the dissonance of *second* existing between them. The *Do*, C, is preferable to *Re*, D; because, being a part of the first group, it connects it with the second by the means of what, in the actual language of counterpoint, is called a *preparation of fifth.* All the other notes of the heptachord are incompatible with the second group, on account of their relation of dissonance of *second;* which is thus exemplified:



§ 56. The third group or *precadence* being pretonic, and the precursor of the absolute cadence, has in itself evidently a most active character, which distinguishes it from the second group, naturally sluggish, slack, and passive. The third group is susceptible of an increase of two *thirds;* one of which is one of the notes of the first group, viz. the *Sol*, G; the other is one of the notes of the second group, viz. the *Fa*, F. These observations clearly show that the second group or *transcadence* is linked to the first group only, whilst the third group, the *precadence*, is linked to the second and to the first. The following example will carry this truth from the mind to the eye:

§ 57. Let us observe that the third group or *precadence* contains a semi-dissonant note, the *Fa*, F, which is an interval of third with the *Re*, D, and an interval of *second* with the *Sol*, G. This is the very cause which prevents that chord—*Sol, Si, Re, Fa* = G, B, D, F—hitherto called the *chord of sensible or 7th on the dominant*, though merely composed of *thirds*, from being completely consonant. If this reason has been known, it was never yet expressed. This chord, nevertheless, is the strongest, the most imperious of all; as it never accepts the part of second member of the absolute *cadence*, as not only the first group does, but the second too; and as also it commands the immediate apparition of the *cadence*, or first group, less sonorous than it is itself, but, however, more harmonious, on account of the purity and proximity to each other of its two thirds, none of which is octaved; and on account principally of its quality of *tonic*.



§ 58. The reader here must not overlook that the second and the third group do not possess the quality of tonics; because their gamut differs from that of the first group, either in a flat or a sharp; which keeps them under the dominion of, and subservient to, the first, the mark of which they bear.

§ 59. That simple fact of the distribution of the heptachord into three consonant groups, explains all the other facts, which at last become the rules of harmonic composition. Retardation and resolution; prolongation and addition; syncopation; organ point, or fermata; alterations; modulation; the strong and the weak time of the bar of the musical phrase, and period, viz. the rhythm; the pedal; symphonic movement; all is explained by that simple and feracious fact; and is explained, indeed, simply, immediately, and completely.

This teemful fact bears in itself, both essentially and indelibly, the character of the primitive and radical notion of the science of harmony.

§ 60. Consonance, as an entire and absolute idea, is indivisible and admits of no perfection or imperfection, since any alteration whatever, even the least, causes it to disappear at once and absolutely by substituting a dissonance in its stead. Hence the absurdity of the title of *perfect consonance*, from time immemorial attributed to the *fifth*, and never contested.

If all the musical writers declare the *fifth* to be an unalterable interval, viz. that it suffers no accident of either flat or sharp, how can they consistently, yielding to a fresh whim, acknowledge among their numerous list of chords those of *extreme sharp fifth*, 1—3—5♯, and of *diminished* or *imperfect fifth*, 1—3—5♭, unconscious of, or overlooking, the fact that those alterations, by destroying its nature or quality of *fifth*, render it a mere passing note, which by the flat falls on the 4, and by the sharp is raised to the *sixth ?* Others give the name of *diminished fifth* only to the interval which, in ascending, is found from the 7 of an octave, *Si*, B, in the key of *Do*, C; for instance, to the note 4 of the superior octave, 7—2—4, *Si*, *Re*, *Fa*—B, D, F. But this is not less useless than absurd: useless, because the note *Si*, B, 7, is not the tonic note of that chord; the tonic note of which is the *Sol*, G, 5; whence it results that the true chord is 5—7—2—4 in the key of *Do*, C; a chord equal to 1—3—5—7♮, if considered in the key of its fifth, *Sol*, G, and which is precisely the third group of the geneuphonic distribution of the heptachord; the *precadence* of the melo-harmonic typometre; the pretonic chord, first member of the absolute cadence, called *magistral* by many authors, called the perfect chord by all.

§ 61. It is equally incorrect, on another account, to give the name of *diminished* or *imperfect fifth* to that ascendant interval from *Si*, B, 7, to *Fa*, F, 4; and it is because this chord, having, as we have just seen, the *Sol*, G, for key-note, and the *Re*, D, for unaltered or natural fifth, would then exhibit the counter principle of a chord possessing two fifths; and, moreover, two minor *thirds*, viz. *Si*, *Re*—*Re*, *Fa* (B, D—D, F); but the consonance alluded to is exclusively composed of only two thirds, one of which must indispensably be a major one, and the other a minor one. Such a group, therefore, cannot be called a chord of *imperfect* fifth, nor even a chord. Hence it results that its truer name would be that of dissonance of *diminished seventh*, had not the *Geneuphony* denominated it by the simplest and the most exact of all names, viz. that of *third* group or *precadence*.

It is, moreover, incontestable that the cause of the pleasingness of the union of the 5 to the 1 does not lay in its quality of its *fifth*,

but in that of being in the interval of third with either the 3 or the 7♮. This becomes proved by the following experiment. If from the group in question, *Sol*, *Si*, *Re*, *Fa*—C, B, D, F, you take off the *Si*, B, and the *Fa*, F, which will leave the fifth, *Re*, D, bereft of its two minor *thirds*, both inferior and superior; and if you add to the 5 another note than *Si* or *Fa*, let it be what it will, your ear will perceive that then dissonance has disappeared, and it will feel impatient until that 5 be destroyed and replaced by a consonance, viz. by the third of another tonic, or by the *third* of its third.

Let it finally be added, that even in the case of considering the *fifth* as a consonance, independently of its inferior third, its aptitude or capability to enter into the category of *thirds* in the sole perfect consonance of music, 1—3—5, would still suffice that it ought to be placed as a *third* in the general rule, for the sake of the simplicity, the briefness, and the regularity of the theory.

§ 62. The chromatic and the enharmonic progression do not enter into the euphonic system of nature. Every thing in it is explained without them and by the necessity of their rejection. These progressions, therefore, cannot constitute distinct musical genera. The diatonic progression is the basis of the sole real, of the sole possible, musical genius. The chromatic and enharmonic scale are contained within the diatonic one, as inches and lines are contained in a foot; as degrees and minutes within the compass of a barometer-board. That chromatism and enharmonism are not generators of harmony, is an assertion completely proved by the sufficiency of the introduction of one single fresh accident into any scale whatever to alter it.

§ 63. As to the number of tonics distinctly perceivable, Richter declares that some harmonists do not acknowledge more than twelve; that Heinichen found twenty-four; and that thirty is the number beyond which no human ear can possibly go.

§ 64. In the fretted as well as in the keyed instruments there are no more than twelve tonics distinctly perceptible by the ear, since the same sound is uttered and does for both the sharp and the flat. Nevertheless, the music composed for those instruments is written with all the signs arising from the enharmonic division by means of sharps and flats, as if *Do*, C♯, was totally different from *Re*, D♭; *Mi*, E♮, from *Fa*, F♭; *Si*, B♯, from *Do*, C♮; *La*, A♭, from *Sol*, G♯; and so on; because, on instruments played with a bow, those sounds can be so clearly separated from each other, and produced with so exact an intonation, that the ear then never blends nor jumbles them together.

§ 65. The division of the two diatonic semitones, viz. of the intervals from *Mi*, E, to *Fa*, F, and from *Si*, B, to *Do*, C, into three parts, as it takes place for the other intervals, which are all of a whole tone, necessarily produces a disorder, which renders enharmonic succession irregular, and causes, for instance, the superior note flat to be lower than the inferior or preceding one sharp, which is against the general principle ; but though this fact, though that disorder, give birth to a crowd of more or less curious circumstances in theory, no notice of them has been taken in this work, on account of their being insignificant in practical composition.

§ 66. According to classical authors on counterpoint, the diatonic scale contains six tonics, to which they give the name of *natural*, and which are the first six notes. They deny that quality of tonic to the *Si*, B, 7, under the pretence of its having no natural *fifth* in the same heptachord. Notwithstanding that denial, however, they consider the *Si* as a key-note, in order to bestow on the interval, *Si*, *Fa*—B, F, the name of *chord of imperfect fifth*, which fully confirms our assertion above expressed, that *Sol*, G, is the true tonic of that chord, and that it really is a *dissonance of imperfect seventh*, or rather the third group of the heptachord, the *precadence* of the scale. (See §§ 60 and 61.) The scales so called *natural* are all entirely different, because the two semitones of the primitive gamut of *Do*, C, fall in each of them in a distinct position; and as those masters rest their teaching of harmony and counterpoint on that great diversity of scales, hence those rules which protract, complicate, and embarrass the study of beautiful composition, that really revolves and harmonizes upon the sole scale of *Do*, C, successively transferred by graceful modulations (but without altering in the least its simple and few rules) to the various keys of the two modes, in order to produce delightful melodies and all possible symphonic effect.

§ 67. It is an error to say that relative keys are employed without preparation. The preparation is always the same between the key just entered into and the preceding one.

§ 68. Some authors consider as relative all the keys which in their perfect chord, 1—3—5, have one note unaltered of the perfect chord of the primordial key; whence it would result, for instance, that the key of *Mi*, E natural major, the scale of which reckons four sharps, should be *relative* to the key of *Do*, C, which has none. This needs no refutation.

§ 69. Any melody whatever, though not presenting by itself a

fresh scale, can be accompanied by the consonance of another key, because the accompaniment introduces that other new key and converts the note of the melody into a note of that new key, bereaving it of its anterior number to give it the number that corresponds to it in the new scale: for instance, the *Mi*, E, has the *Do*, C, for its natural accompaniment; but if the composer wishes to raise it to the degree and number of note 5, it will then have *La*, A, for its tonic bass, and will become accompanied by it. The modulation in that case will fall by broken cadence from the key of *Do*, C natural major, to that of *La*, A natural minor. It is evident that such a movement as this can have taken place without a special preparation, because the consonance or cadence of *La*, A minor, is formed out of unaltered notes of the scale of *Do*, C major; viz. *La*, *Do*, *Mi*—A, C, E. In order to carry on that movement by absolute cadence, it is necessary to pre-utter the third group or *pre-cadence* of *La*, A minor. Then the march of the modulation is as follows: *Do*, *Mi*, *Sol*—C, E, G = *Si*, *Re*, *Mi*, *Sol* ♯—B, D, E, G ♯ = *La*, *Do*, *Mi*, *La*—A, C, E, A; whence it is seen that the same note, *Mi*, E, of the melody bears a different character in each of the three chords, or members of the modulation; viz. in the first, it is note 3; in the second, it is note 1; in the third, it is note 5. To an intelligent reader this will suffice: he will understand enough that modulation gets accomplished always by a prolongation; always by the shock of two tonics; always by means of a *cadence;* but not in the manner as it has been hitherto taught.

§ 70. It occurs, and not unfrequently, that passing notes are written not as small notes, but as integral ones of the first time of the bar. With regard to this fact, our reader will advert:

1st. That the small note is a retardation of the following note.

2ndly. That every retardation is dissonant.

3rdly. That the consonant note is always the retarded one; that is to say, the one that follows the retardation.

4thly. That aspiration, or silence, is a mute part of the duration of time; and that the sound kept unuttered during that silence is necessarily consonant, which is equivalent to say that it is either 1, or 3, or 5 of the scale established in that time.

5thly. That the notes which do not proceed gradually, or in conjunct progression, but, on the contrary, follow each other by different intervals, as it were by hops and jumps, are improperly called *passing notes;* for the reason, that in all cases they are all and each of them necessarily consonant, and consequently notes 1, 3, or 5 of the scale reigning in the time where they are.

§ 71. Let us say, in concluding these Prolegomena, that if the great theorist, General de Virués, has, in his *Table of Polytonogamism*, though leaving, if we can say so, all perceptible sounds in the immensity of the space, still marked each of them with a sign of recognition and classification; of admission or rejection; we have, in our *Typometric Table*, raised the branchy, extensive, and bushy oak, the acorn of which he had planted: for, indeed, the *Typometric Table* presents to the youthful student, who with this volume will soon become a composer, a nursery of all the legitimate and nearly ready-made chords to be used in music. After having perused the first Treatise only of the following *Geneuphonic Grammar*, let him take hold of all the chords shown in that table, as of the sole eligible matter of his operations, a matter which he can alter, of course, not in its substance, but in its form, by his choice of the inversions, or of the octavism, and by placing intermediate sounds or chords between the three harmonic groups of the *Typometer*. But let him never lose sight of the characteristical facts hereafter briefly resumed.

§ 72. 1st. All the chords played at once by a whole orchestra, numerous as it may be in both voices and instruments, will always be consonant, as often as, from the gravest to the most acute sound, they proceed in their sonorous ascent by an uninterrupted series of minor *thirds*, or when, played one after another through successive modulations, they proceed by an alternate progression of minor and major *thirds*, and reciprocally.

2ndly. If they proceed in the said ascent by an uninterrupted progression of major *thirds*, they will, when reaching the fourth or the fifth note from the gravest, become charged with double accidents, or productive of dissonance, or they will fall in the octave.

3rdly. The minor *third* being the only generator of consonance and euphony, every interval greater or less than the minor *third* generates dissonance, but not cacophony: and the accession of a *second* to any chord forms between that *second* and the stricken note a collision of tonics, a conjunction, the lower note of which becomes note 4, and the higher note 5, of a new key. Together with that conjunction, an accident always appears, which falls on the note 3 of the established key; and this becomes note 7 of the key next to be entered into, which 7 becomes 4 in the following key. For instance, let our reader write, in music, the following series of chords.

First Bar.	*Second Bar.*	*Third Bar.*	*Fourth Bar.*	*Fifth Bar.*
1 La 8ve 4 Sol	4 Do 4 Fa	4 Si♭ 4 Mi♭	4 La 4 Re	1 La 8ve
5 Mi 2 Mi	2 La 2 Re	2 Sol 2 Do	2 Fa♯ 2 Si	5 Mi
3 Do♯ 7♯Do 4♮	7♯Fa 4♮ 7 Si 4♭	7 Mi 4♭ 7 La 4	7♯Re 4♮ 7 Sol ♯	3 Do♯
1 La 5 La	5 Re 5 Sol	5 Do 5 Fa	5 Si 5 Mi	1 La

Keys,	La	Re	Sol	Do	Fa	Si	Mi	La	La
	1	1	1	1	1	1	1	1	1

The first chord of this example presents the pure and complete cadence of the key of *La*♮ major; the second chord gives the same cadence, but it gives it altered by the accession of the note *Sol*, which, being in interval of second with the *La*, becomes note 4 of a new key, of which the *La* will be the note 5. Now, as the note *Re* is the only one which, in its six scales, has the *Sol* for note 4 and the *La* for note 5, it is manifest that we have passed from the key of *La* into that of *Re*, which is rendered still more evident by the presence of the *Do*♯, which, from note 3, as it was in the preceding chord, becomes note 7 of the new key. Mind that this altered cadence of the key of *La* is at the same time the complete precadence of the key of *Re*, also ♮ major. If, in the following group, first chord of the second bar, instead of pronouncing pure the cadence of *Re*, we alter it by the accession of a second, viz. by uttering the *Do;* that *Do*, being in conjunction with the *Re*, will become note 4 of the key of which the *Re* is note 5: that is to name the key of *Sol*. Let us alter again the cadence of *Sol*, which follows, by introducing into it the *Fa*, which, by its shock with the *Sol*, will also form the conjunction *Fa—Sol*, 4—5 of the key of *Do*, of which it is also the complete precadence. Following the same process, let us, instead of pronouncing the pure cadence of *Do*, alter it by the expression of the note *Si*, and immediately the clashing of the two tonics, *Si* and *Do*, destroys the established key of *Do*, and destroys it in the very chord where the conjunction takes place. That conjunction changes all of a sudden the cadencial and consequently consonant character of *Mi*, 3 of the scale of *Do*, into the precadencial and consequently dissonant character of *Mi*, 7 of the scale of *Fa*.

The reader will now easily continue this analysis by himself. Let him observe that as soon as we utter a cadence in all its purity, the series of shocks or conjunctions, and consequently of destructions and reproductions, are at an end. This takes place on the strong part of time of bar 5th, in which the cadence of *La* remains unaltered, as it is in the first chord of the first bar. Our reader will also remark, that the *Do*, 7 in the second chord, becomes 4 in the

following key of *Sol*; that the *Fa*, 7, of that key, third chord of this example, becomes 4 in the following chord, which belongs to the key of *Do*. What is the cause of this curious fact? Here it is: "every cadence is the incomplete precadence of the key built on the note 4 of its own scale." This explains the fact of all the chords of this example, from the first to the eighth, being between them invariably in the interval of ascending fourth, as is demonstrated by the sole inspection of their tonics: *La—Re—Sol—Do—Fa*, &c. &c. This most interesting topic shall be much more extensively treated in the practical treatise of the *Geneuphonic Grammar of Harmony*, which follows the present Prolegomena.

4thly. Whether a few modulations only, or harmonic marches, be wished for, or a complete change of key from the primordial one to nearer or more distant scales be wanted; the sole and universal *rule* for modulating, or entirely changing of key, must always be strictly observed. (Look for that rule in the Analytical Index.)

5thly. The Typometre is the sole mould of the unerring guide to melody and harmony; for this very reason, that of the five relative scales, those of the 4 and of the 5 are the only ones necessary to establish and fix the key of the 1; because, in a melody, there is no transposition, or translation, more natural than that of the absolute cadence, which consists of the pre-articulation or pre-utterance of the *cadence* 1—3—5, formed from the *tonic*, *Do*, C, to the *fifth*, *Sol*, G. Now, as the *Do*, C, of the first group is the fifth of the tonic *Fa*, F, of the second group, this second group necessarily and immediately follows the first by absolute *cadence*. So, as the *tonic*, *Sol*, G, of the third group is a *fifth* of the *tonic*, *Do*, C, of the first group, this first group necessarily and immediately follows the third by absolute *cadence*. The march of melody and of harmony, the march of music, is submitted to, and tied up by these three accidents 1—4—5, surmounted by their respective crowns of *thirds*. From the first to the second, from the third to the first group, are the absolute cadences: between the second and the third is the conjunction. That law is never infringed; only, the composer may sometimes differ its application, by introducing between the constitutive members of the Typometric period *avoided*, *interrupted* or *broken* cadences, which are to musical discourse that which modificative, incidental phrases and parentheses are to the verbal or written speech; in which, when they come, they delay, but never prevent, the indispensable arrival of the constitutive parts of the complete grammatical sentence, necessary to the regular and logical

expression of our ideas and thoughts. Such is the primitive, the unexceptionable, the infallible and undeniable Typometric truth.

Let it, therefore, be the luminous leader of the young land-surveyor in the wide field of harmony; and if, after having chosen the Geneuphonic theory for the ground of his experiments and operations, he takes the axioms contained in the above Prolegomena as his bench-marks upon it, we venture to pledge our word that he will be correct in his calculations, faithful and pleasing in his drawings, and, in all his combinations and arrangements, fortunate and successful.

GENEUPHONIC GRAMMAR

OF

HARMONY, COUNTERPOINT, AND MUSICAL COMPOSITION.

THE PRACTICAL TREATISE.

CHAPTER I.

PRELIMINARY NOTIONS—AXIOMS.

§ 1. CREATING good musical works consists in three things; viz. *Harmony*, *Counterpoint*, and *Composition*. We shall not treat of *Genius*, for it cannot be taught.

§ 2.—1. To compose music is to devise an order of agreeable successions of some of the twelve sounds* of the scale, by distributing them in various *times*.

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* We intended at this part to give a definition of *musical sound* in a note; but believing it to be impossible to compose one better than that which is presented at the opening of the Treatise on Harmony by the celebrated Reicha, we shall confine ourselves to a literal translation of the first page of this excellent work, in which the author, throwing on the ancient theories as much light as they are capable of receiving, has shewn himself, in this respect, the worthy rival of the learned Catel. Mr. Reicha expresses himself as follows:

"Musical sound is nothing more than the effect of the vibrations or oscillations of elastic, and, at the same time, sonorous bodies, when these vibrations are made with the rapidity necessary to render them appreciable by our organs of hearing.

"Air, which is itself the most elastic of bodies, immediately receives these oscillations, and is the vehicle for communicating them to our ear. It is this regular movement of air, set in motion by a sonorous body, which forms sound, properly so called, and which could not be appreciated or felt without this element, as is proved by the Pneumatic machine, under which no sound whatever is audible, on account of the absence of air. The gravity of a sound is always in an inverse ratio to the number of vibrations; thus, the fewer the vibrations made by a sonorous body in a given time, the graver is the sound which it produces, and the more it makes, the more acute is the sound.

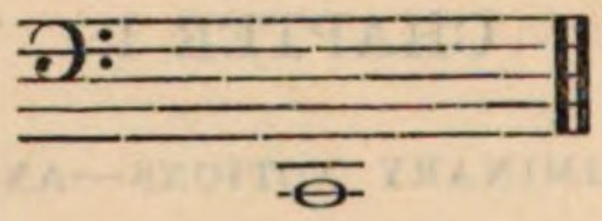
2. Composition may be either simple or multiple. All parts beyond four are only repetitions of the unison, or of the octave of some one of these four melodies, of which harmony is composed.

3. Melody once invented, harmony exists without the composer's intervention.

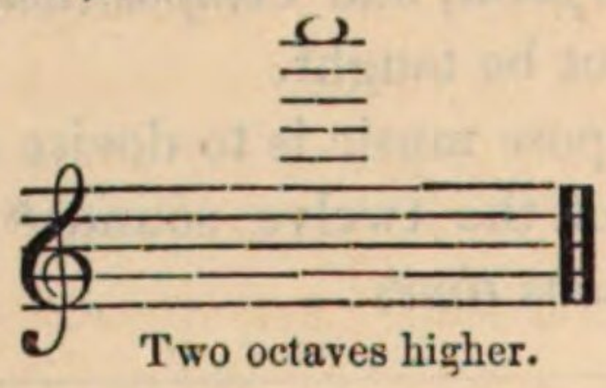
4. Since the ancient art of Counterpoint was merely that of inventing the harmony of a given melody, this art becomes thoroughly altered and simplified from the moment that harmony becomes independent of the aid of invention.

"The lowest sound which our ear is capable of appreciating, makes about thirty-two vibrations in a second: it answers to the following *Do*, C.

Two octaves lower.



"And the highest makes sixteen thousand three hundred and eighty-four: it answers to the following *Do*, C.



Two octaves higher.

"Thus all musical sounds, that is to say, all appreciable ones, are contained between the two *Dos*, Cs. All these sounds are divided into nine octaves; but the lowest and the two most acute octaves are not generally practised; so that the sounds in use are almost reduced to those contained between the two following *Dos*, Cs.

"Notes were invented to represent sounds; by these the composer expresses his ideas: they are to him what colours are to the painter."

OF HARMONY.

CHAPTER II.

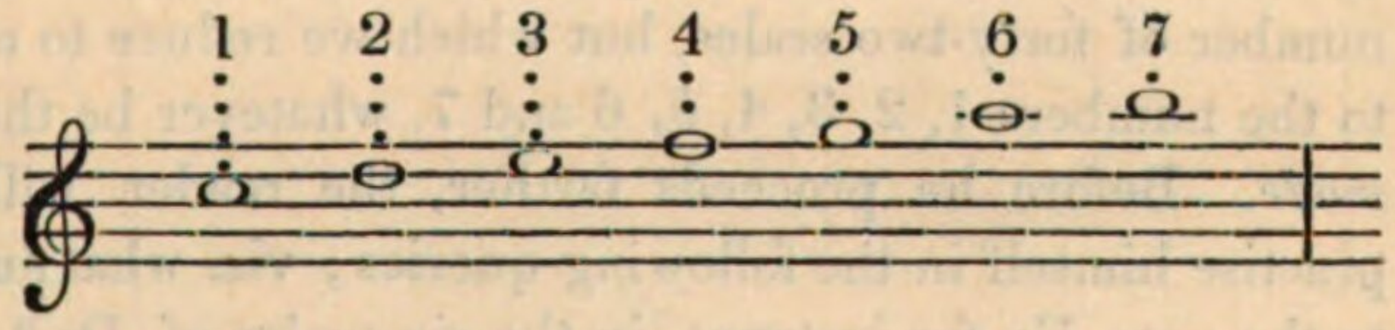
§ 3. Harmony consists in the addition or agreeable union of one or more sounds to another sound previously determined, which is called *Melody*, *Air*, or *Singing Part*. As *Melody* is a succession of sounds produced by a single voice or part, it is, by its nature, always *simple;* and *Harmony*, being the simultaneousness of several of these voices or parts, is, by its nature, essentially *multiple*. If that simultaneousness consists of two melodies or parts, it is named *Duett;* if of three parts, it is named *Trio* or *Terzett;* and if of four, it is called *Quartett* or *Chorus*, and includes the *Treble* or *Soprano*, the *Counter-tenor*, the *Tenor*, and *Bass*.

Harmony is formed by the seven sounds of the common gamut or scale, either in the *major*, or in the *minor* mode.

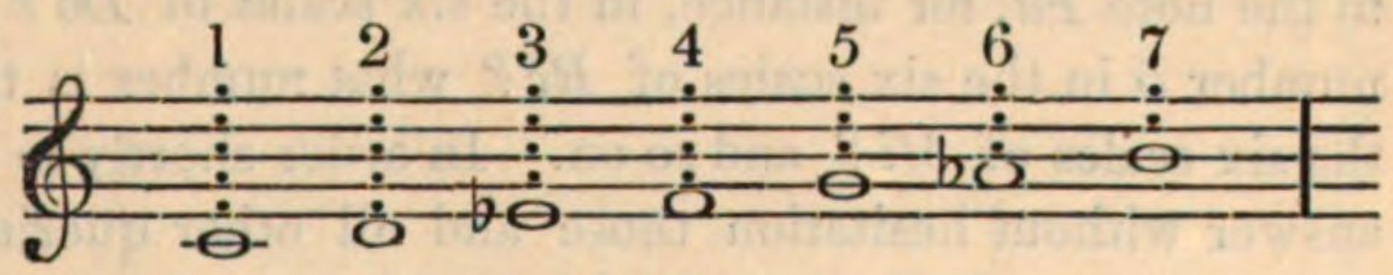
A characteristic figure is applied to each of those seven sounds, in order to render easier their harmonical management.

Example.

Major Mode.



Minor Mode.



(The octaves bear all the same number.)

§ 4. The reader will recollect that each of the seven notes of the gamut may have one of these three qualities, viz. *natural*, *flattened*, or *sharpened*. Accordingly, there are three keys of *Do;* the first *natural*, the second *flat*, and the third *sharp:* three keys of *Re;* the first *natural*, the second *flat*, and the third *sharp:* three keys of *Mi*, three keys of *Fa*, &c. &c. also *natural*, *flat*, and

sharp. It is therefore clear, that as the notes of the scale are seven in number, and each of those notes produces three keys, the total number of keys in music is twenty-one ; and that in the three keys of each note, the same figures or numbers must correspond with the same notes of its gamut: for instance, in the three scales or keys of *Do*, either major or minor, the *Do* is always number 1, the *Re* is always number 2, the *Mi* always number 3, and so on. That fact is demonstrated in the following example.

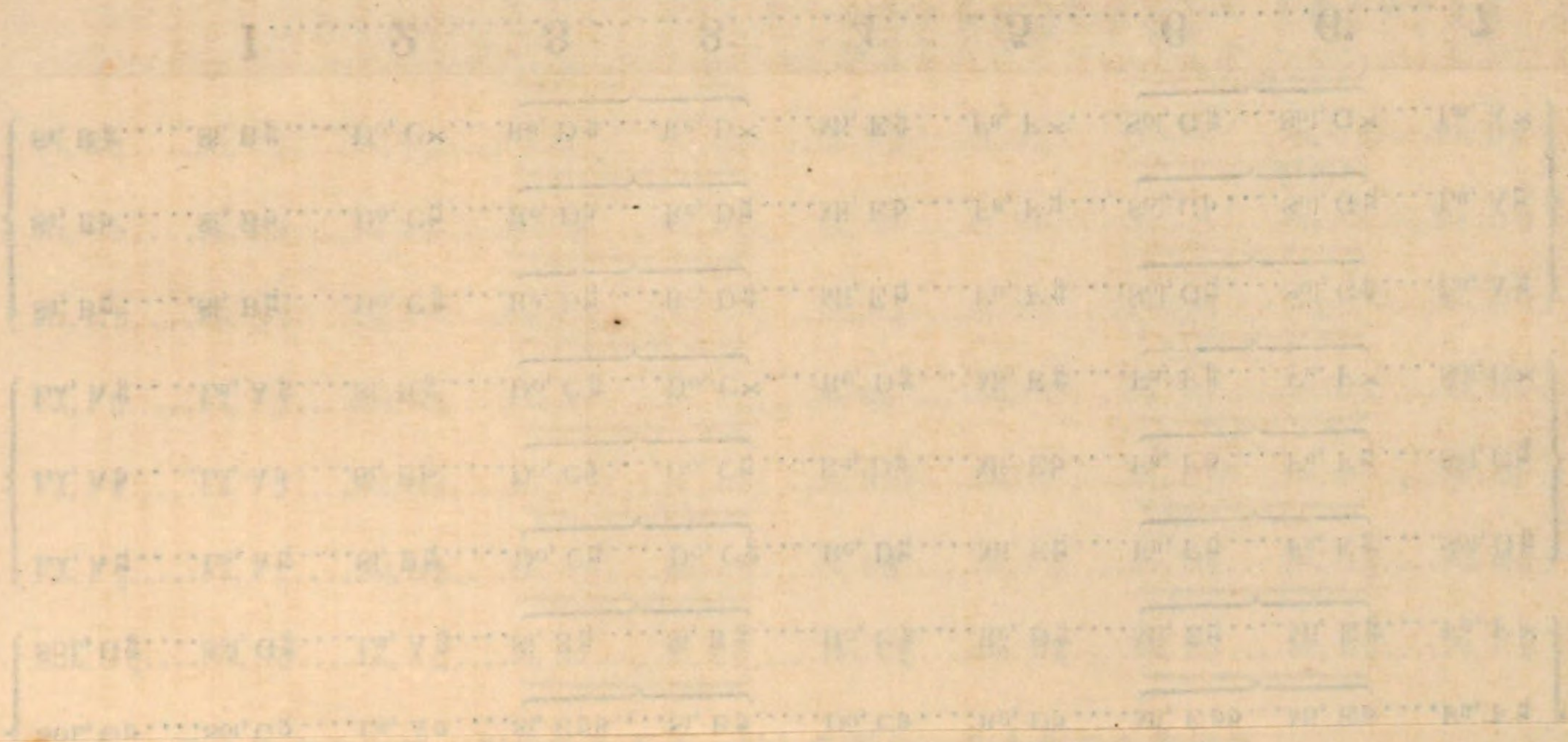
Example of the Six Scales of Do.

	1	2	3	4	5	6	7
Major Mode.	Do♮	Re♮	Mi♮	Fa♮	Sol♮	La♮	Si♮
	Do♭	Re♭	Mi♭	Fa♭	Sol♭	La♭	Si♭
	Do♯	Re♯	Mi♯	Fa♯	Sol♯	La♯	Si♯

	1	2	3	4	5	6	7
Minor Mode.	Do♮	Re♮	Mi♭	Fa♮	Sol♮	La♭	Si♮
	Do♭	Re♭	Mi♭♭	Fa♭	Sol♭	La♭♭	Si♭
	Do♯	Re♯	Mi♮	Fa♯	Sol♯	La♮	Si♯
	⋮	⋮	⋮	⋮	⋮	⋮	⋮
	C	D	E	F	G	A	B

§ 5. It is desirable that the reader should have in his constant remembrance, that, since in music there are twenty-one keys and two modes, it hence obviously arises that there are the astonishing number of forty-two scales, but which we reduce to one only; *i. e.* to the numbers 1, 2, 3, 4, 5, 6 and 7, whatever be the *key*, or the *mode*. Before he proceeds farther, the reader will do well to practise himself in the following queries; viz. what number belongs to the note *Fa*, for instance, in the six scales of *Do?* what note is number 5 in the six scales of *Re?* what number is that of *La* in the six scales of *Mi?* and so on. In order shortly to enable him to answer without hesitation those and all other queries of the same category, we shall acquaint him with a very simple rule, with which he cannot be acquainted, since no master has ever before taught it, and probably not even thought of it.

§ 6. The reader probably knows the classical names of the seven notes, viz.: Cesolfaut, Delasasolre, Elamisi, Fefautsi, Gesolreut, Alamire, Befamisi. Those names will immediately provide him with the answers to all his queries; as soon, in fact, as he knows that in those names are to be found the names of the notes



CYPHERING OF GAMUTS, OR THE SEVEN DENOMINATIVE NUMBERS,

APPLIED TO THE TWENTY-ONE KEYS OF THE TWO MODES.

KEYS. **1.....2.....3.....3'.....4.....5.....6.....6'.....7**

Minor. Major. Minor. Major.

Do, C♮.....Do, C♮....Re, D♮....Mi, E♭....Mi, E♮....Fa, F♮....Sol, G♮....La, A♭....La, A♮....Si, B♮	Do, C.
Do, C♭....Do, C♭....Re, D♭....Mi, E♭♭...Mi, E♭....Fa, F♭....Sol, G♭....La, A♭♭...La, A♭....Si, B♭	
Do, C♯....Do, C♯....Re, D♯....Mi, E♮....Mi, E♯....Fa, F♯....Sol, G♯....La, A♮....La, A♯....Si, B♯	

Re, D♮....Re, D♮....Mi, E♮....Fa, F♮....Fa, F♯....Sol, G♮....La, A♮....Si, B♭.....Si, B♮.....Do, C♯	Re, D.
Re, D♭....Re, D♭....Mi, E♭....Fa, F♭♭...Fa, F♮....Sol, G♭....La, A♭....Si, B♭♭....Si, B♭.....Do, C♮	
Re, D♯....Re, D♯....Mi, E♯....Fa, F♯....Fa, F×....Sol, G♯....La, A♯....Si, B♮.....Si, B♯.....Do, C×	

1.....2.....3.....3'.....4.....5.....6.....6'.....7

(*To face page 95.*)

1, 4, and 5 of their respective keys, by placing those notes in the ascending progression, as follows:

		1	4	5
Cesolfaut.....*Do—Fa—Sol*	in the Six Scales of	Ut—C....	Ut...	Fa.... Sol
Delasolre.....*Re—Sol—La*		Re—D....	Re..	Sol .. La
Elamisi .. .. *Mi—La—Si*		Mi—E....	Mi..	La.... Si
Fefautsi.. .. *Fa—Si—Do*		Fa—F....	Fa..	Si.... Ut
Gesolreut .. *Sol—Do—Re*		Sol—G ..	Sol..	Ut.... Re
Alamire... ... *La—Re—Mi*		La—A....	La..	Re.... Mi
Befamisi....*Si—Mi—Fa*		Si—B....	Si ..	Mi.... Fa

At the first inspection of this little formula, the reader will acknowledge the immensity of the labour and study that he will save by having it constantly present to his mind; for, in short, knowing the notes 1, 4, and 5 of a key, what difficulty will he have in finding the number of any and each of the other notes? and in order to afford him still more facility, and a greater saving of his time, we have formed the annexed table, containing every number corresponding with each sound or note in each of the forty-two scales of music.

As the notes 3 and 6 are the two *modic* notes, and differ a semitone in the two modes, their numbers will be distinguished by bearing, in the major mode, a dot, which is in music the augmentative sign. The major third, in fact, ought to be considered as a mere *dissonant augmentation of the minor third*, which is the only musical consonance.

In all that precedes, little more has been done than to recall to the reader's remembrance a knowledge which he already possessed, —without knowing how to use it;—and we are sure he has not been fatigued by the perusal of these two chapters; nevertheless, we inform him that he has already made a gigantic step in the science of Harmony; of which he will soon have a convincing proof: but let us proceed.

§ 7. The reader understands already, that since there are only seven numbers, the octave of each, both low and acute, is merely a repetition of them. Consequently, it is clear that a sound written on one, two, three, or four octaves, &c. is only one sound as regards harmony. For example, every *Fa*, F, of a pianoforte, organ, or any other instrument used in an orchestra, is only single *sound* 4, in the key of *Do*, C. Every *Re*, D, in the key of *Do*, C, is note 2. Every *Sol*, G, in the key of *Si*, B, is note 6, &c. &c.

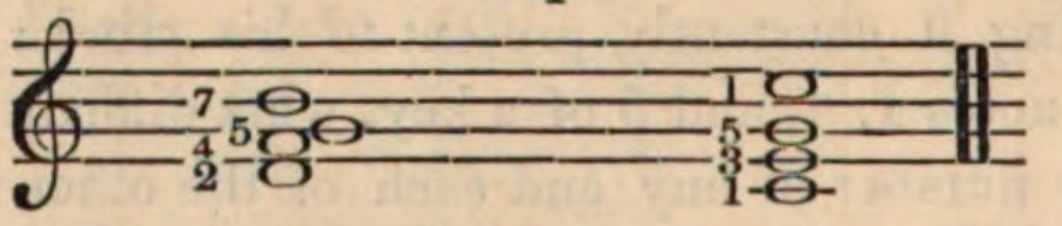
After a little familiarity with this operation, by the written ap-

plication of the numbers to all the notes of any small piece of music, the reader may proceed to study, and get by heart, the distribution of the seven sounds of the two *chords*, which will be called *Precadence* and *Cadence*.

In the key of *Do*, C.

	Neuter Precadence.*	Cadence.	
Sounds or notes.	7....Si, B.....	.....Do, C....1	Sounds or notes.
	5....Sol, G....	Sol, G....5	
	4....Fa, F.....	Mi, E....3	
	2....Re, D.....	.....Do, C....1	

Example.



These two sets of numbers, their names *Precadence* and *Cadence*, should be carefully committed to memory, and the reader should exercise himself in marking them on the stave in any key he pleases; and when he shall have written his example for one key, he must compare it with the example to be found in the annexed Table, where he will find these two chords marked on each of the *twenty-one keys* of the two *modes*.

CHAPTER III.

ORIGIN AND CONSTITUTION OF GAMUTS—TABLE OF HEPTACHORDS.

§ 8. From what we have but cursorily stated (Prologomena, § § 40 and 41), the reader knows that any heptachord, increased by the octave of its Tonic, and chosen as primitive, can be divided into two halves or Tetrachords: that its first tetrachord may be considered as the second tetrachord of an anterior scale, the tonic of which will be the *fourth* of the primitive heptachord or scale, and that its second tetrachord may be considered as the first tetrachord of a posterior heptachord or scale, the tonic of which will be

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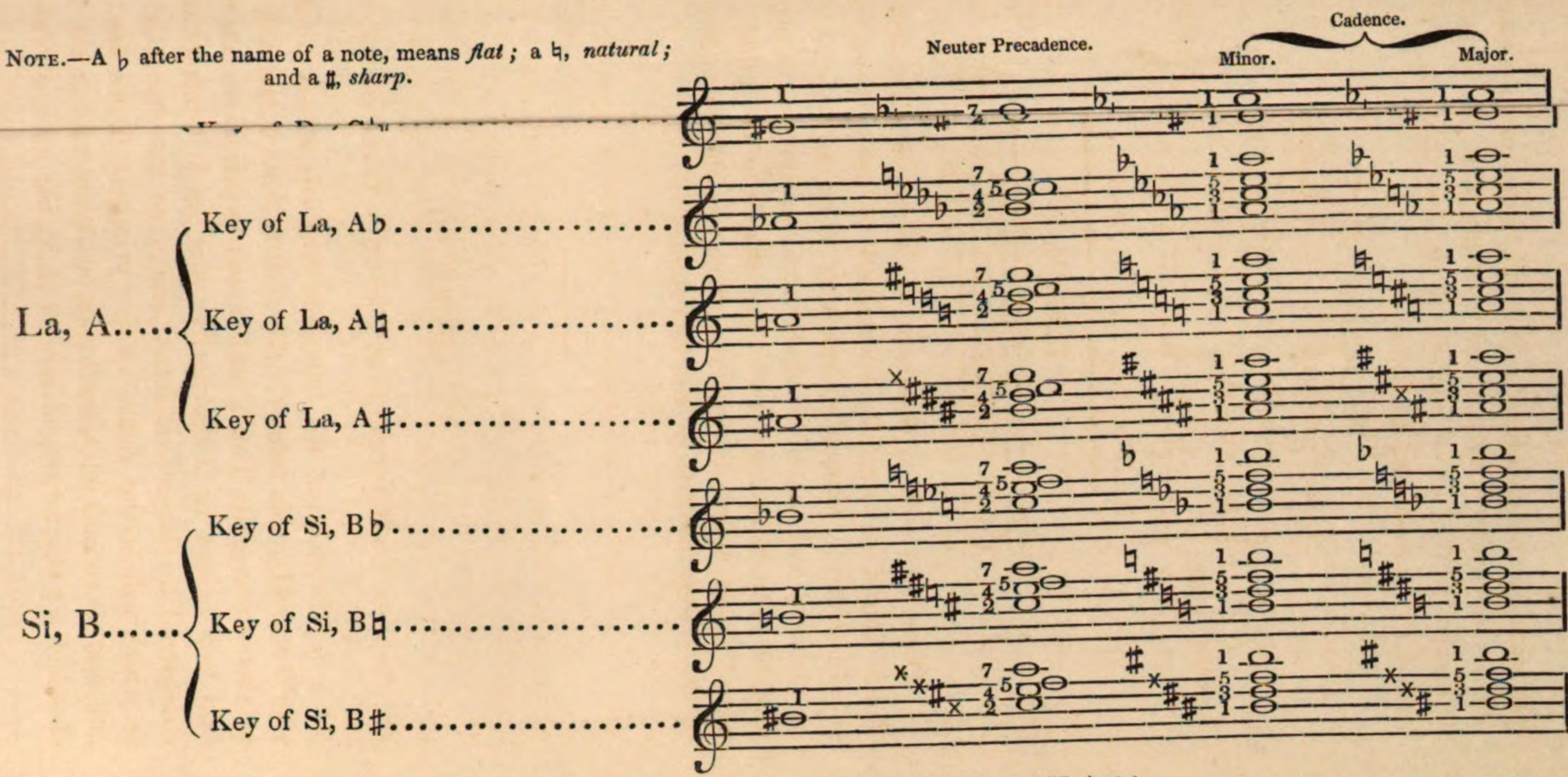
* This designation is given to that which belongs to both modes at once.

TABLE OF MODULATIONS AND TRANSITIONS.

NOTE.—A ♭ after the name of a note, means *flat*; a ♮, *natural*; and a ♯, *sharp*.



(See Prolegomena, § 72; and the present Treatise, Chap. VII, § 40.)

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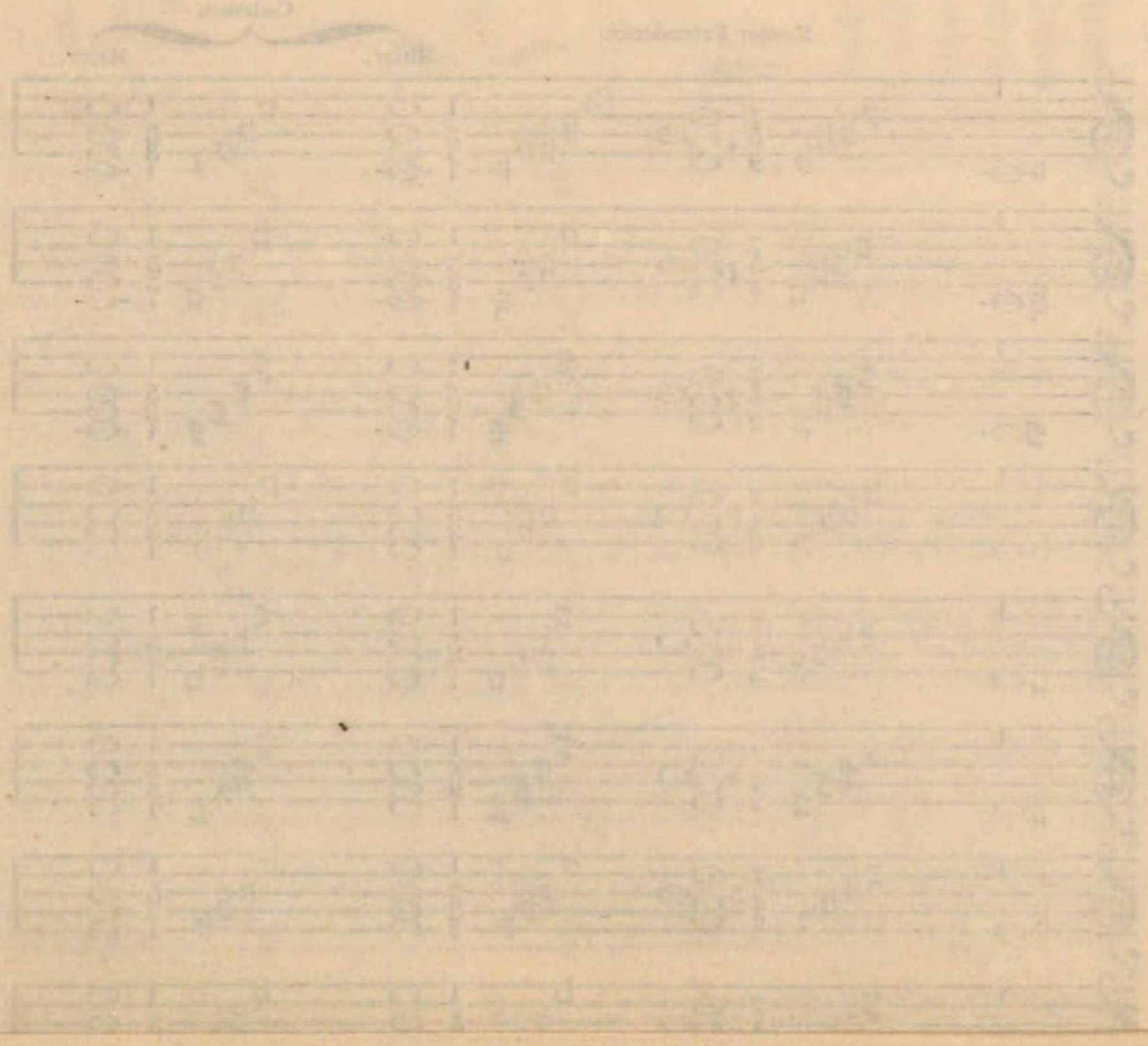


'ACHORDS OR S

Heptachord.

2nd Tetrachord.

5 6 7 1

——Sol, La, Si, Do

1 2 3 4

——Sol, La, Si, Do—F

I

erivation by 5th

6 7 1

ol♯, La♯, Si—*5th derivation by 5th*

4 5 6 7 1

♯, Si—Do♯, Re♯, Mi♯, Fa♯—*6th derivation by 5th*

5 6 7 1

——Sol, La, Si, Do

the *fifth* of the primitive heptachord. Now, if the reader writes at the top of a large sheet of paper, in the middle of its width, any heptachord which he will have selected as primitive, adding to it the octave of its tonic; and if he writes on the left side of the paper all the scales successively derived from and built on the *fourth* of the last; and on the right side all the scales successively derived from and built on the fifth of the last; he will find that, after seven scales, six of which are derived by fourths as well as by fifths, the two *sixth derivatives* will equally produce or fall into the heptachord or scale which, having been chosen as primitive, will have been the starting point. This is exemplified by the *Table of Heptachords* which we here subjoin, and which we have constructed on the scale of Do, C natural major, taken as primitive heptachord, and to which we have given the preference, on account of its really being the true primitive scale of nature. We recommend to our reader the careful perusal, even the meditation, of the *explanations, observations, and rules* to which the *Table* of *Heptachords* has given rise.

§ 9.—*Explanations—Table of Heptachords or Scales.*

1st. The first line of this table is exclusively dedicated to the primitive heptachord, scale, gamut, or key of *Do*, C, which, being the heptachord or scale of nature, we have chosen for the primitive scale of this table, as before stated; but it is evident that the student may consider as, and take for, primitive heptachord any other scale whatever; construct upon it a table equal to this; and that the same results will invariably be produced.

2nd. Every heptachord which becomes an octave by the repetition of its note 1 or tonic, may be divided into two halves, or tetrachords.

3rd. As an heptachord is a diatonic progression of seven sounds, or notes, so a tetrachord is a diatonic progression of four sounds or notes.

4th. Suppose, therefore, each tetrachord or half-octave to be a piece of ivory, wood, or metal, on which the first half of every octave, scale, or gamut, would be engraved, as well as the second or right half on similar solid pieces of ivory, wood, or metal; and you will find that all the left tetrachords will begin by the tonic 1, and end with the note 4, and that all the right-hand ones will begin with the note 5, and end in the repetition of the tonic 1.

5th. The consequence is, that by separating or putting asunder the 4 and 5, their separation causes the destruction of the gamut,

scale, or key; and that by drawing again close to each other the 4 and 5, and rejoining them, their conjunction brings about the reproduction of the destroyed octave, scale, or key.

6th. Hence clearly arises the origin of the notes 1, 4, and 5, of every scale, being its skeleton, or foundation, or bench-marks. Hence, also, the necessity of presenting to the ear the sounds 4 and 5 immediately before the tonic 1, or the cadence 1, 3, 5, which is and must always be the opening and the final chord, to prepare the ear for its arrival, to inform it that it is coming.

7th. It results from the preceding explanation, that the conjunction of the notes 4 and 5 is eminently, or even essentially, pretonic, or precadential; and that the best way of changing the scale, gamut, or key, is to go out by its cadence of the key which one wishes to abandon, and to enter by its precadence into the one in which he wishes to be; for as soon as, after the precadence of that new gamut or key, he has uttered its cadence, he is already and completely in it.

8th. If you consider the first or left tetrachord of any heptachord, octave, or scale, that has been taken as primitive, as being the second or right tetrachord of a new heptachord, gamut, or key, raised, built, or grounded upon its note 4, viz. of which its 4 will be the tonic, you have formed a first *derivation by fourth* of the primitive heptachord octave.

And if you, on the contrary, consider the second or right tetrachord of any scale which has been taken as primitive as being the first or left tetrachord of a new scale or key, beginning by or grounded on its note 5, viz. of which its note 5 becomes the tonic, you have then formed a first *derivation* by the fifth of the heptachord taken for primitive scale.

9th. If you afterwards take this first twofold derivation of the primitive scale to successively practise upon the first *derivation by fourth* and upon the first *derivation by fifth*, the very same operation which you have just performed on the primitive heptachord, their two first derivations will in their turn be considered as primitive scale; and here you have the secret of the construction of this table: here you have the secret of the greater or smaller relation of keys between themselves: here you have the secret of that principle, that "*The nearer is the kindred between scales, the more agreeable are the modulations, the easier and the sweeter are the changes of keys; and that the more distant is that kindred, the rougher, the more abrupt, and difficult, and the less agreeable to the ear, are the modulations and changes of keys.*" Here you have

the safe, the unerring guide to these two operations, the most important ones in musical composition.

10th. The simple mechanism of the operations above explained likewise reveals the mobile, the true cause of the construction of the melo-harmonic Typometre; the reason why 1—4—5—1 is the only pleasing, the only possible march of any melody; the reason why these three notes are the tonics of the three groups; and hence the fundamental or thorough bass of all melody and of all harmony. In one word, it reveals the secret spring of Polytonism, and Politonogammism; and, joined with the theory of the two thirds (major and minor) of the tritone, both single and double, and of the second, it then reveals the true secret of consonance and dissonance, concord, euphony, discord, and cacophony.

11th. The second line of this table presents the first twofold derivation of the primitive scale of *Do*, C; the one by fourth, on the left side; the other by fifth, on the right side.

Now, if the reader wishes to have the first twofold derivation of any scale derived by fourths from the primitive heptachord of *Do*, C (which are all on the left side of the table), he will find its *derivation* by fourth the next below, and its *derivation by fifth* the next above; whilst, on the contrary,

If the reader wishes to have the first twofold derivation from any of the scales derived by fifths from the primitive heptachord of *Do*, C (which are all on the right side of the present table), he will find, immediately above, its first *derivation by fourth*, and immediately below, its first derivation by fifth.

§ 10.—*Observations.*

1st. All the scales written on the left side of the table, entitled "*Relations of heptachords or scales*," are the *derivations by fourths*, ascending, of the primitive scale of *Do*, C; all those which are written on the right side are the *derivations by fifths*, also ascending, of that same primitive scale.

2nd. The rules given hereafter will present to the intelligent reader a series of facts which will extremely facilitate his researches, and safely guide him in the choice of the modulations and keys to be preferred for such other modulations or keys.

3rd. To the facts shown by the following rules, which are the most essential to be noticed, the industrious student will easily add a great many more by enlarging the sphere of its comparisons; as ours, in the rules below, have been merely confined to, and between,

the primitive scale of *Do*, C, and its derivation. The reader will extend them to these derivations between themselves.

4th. Let us call the key of Do, C, the *primitive scale:* its first twofold derivation, viz. the key of Fa, F, *by fourth*, and the key of Sol, G, *by fifth, the second scales:* its second derivations, viz. the key of Si, B, *by fourth*, and the key of Re, D, *by fifth*, the *ihird scales:* its third derivations, viz. the key of Mi, E, and the key of La, A, *the fourth scales:* and so on.

5th. Observe that the fourth scales and the fifth scales cross each other, so that the reader may apply to the fifth scales what we have said of the fourth, merely by inverting the parts, and saying of the *derivation by fifth* what we have said of the *derivation by fourth*, on account of the fourth scales; and reciprocally.

6th. This conjunction of the fourth and the fifth scales, built on the modic sounds of the primitive scales, viz. on the 3 and the 6, leaving between them the two notes 4 and 5, which are the essential conjunction of the precadential or pretonic group, is a very remarkable feature.

7th. After the fourth scales, no more scales appear different in their syllabic progression from the gamuts anteriorly expressed.

It is therefore obvious that the differences between the fifth scales and the fourth scales cannot be but those arising from the quality of the mode, or the nature of the accidents constitutive of every key, the only one of Do, C natural major, excepted.

8th. Apply the two preceding observations to the sixth scales (those of Re, D, and Si, B), compared with the third scales; and also to the seventh scales (those of Sol, G, and Fa, F), compared with the second scales.

9th. Observe, with deep attention, that you find always filling the same functions: 1st. the two conjunctive and essentially tonic and pretonic notes, 4 and 5; 2ndly. the two modic notes, the 3 and the 6; 3dly. the two extreme precadential notes, the 2 and the 7.

10th. Consider that the derivations, or keys, or gamuts, formed from the note 4 of the primitive scale, are as well found from fifth to fifth descending, as from fourth to fourth ascending; and, *vice versâ*, that the derivations, or keys, scales, or gamuts, formed from the note 5 of the primitive scale, are found as well from fourth to fourth descending, as from fifth to fifth ascending. What a new field is opened to meditation, thoroughly to explain the origin, and more completely to elucidate the theory, of flats and sharps! Let it now suffice to call the reader's attention to this remarkable fact: that "in all the derivations *by fourth* from the primitive heptachord

of *Do*, the note 4 of every new scale brings a new flat; so that the note 4 of the first derivation by fourth, or key of *Fa*, gives the first flat, *Si*♭, B♭; the second derivation by fourth, or key of *Si*, gives the second flat, *Mi*, E; the third derivation gives the third flat, *La*, A; and so on. In the *derivations by fifths*, every fresh derivation brings a fresh sharp, which is always its note 7. Thus, the first derivation by fifth, or key of *Sol*, G, gives the first sharp, *Fa*, F; the second derivation by the fifth, or key of *Ré*, D, produces, at its note 7, the second sharp, *Do*, C; the third derivation by fifth, or key of *La*, brings the third sharp, viz. *Sol*, G; and so on. Hence the reader will discover at one glance why flats go from fifth to fifth in descending, or from fourth to fourth in ascending; why, on the contrary, sharps go from fifth to fifth in ascending, or from fourth to fourth in descending."

It was impossible that the table of heptachords, which is also the table of the birth of scales, should not likewise explain the birth of sharps and flats. Besides the above observations, which are the principal ones, the attentive examination of this table will undoubtedly suggest a great many more to the intelligent and industrious reader.

§ 11.—*Rules*,

1st. The scale of every key has for its transcadence the pure cadence of which its 4 is the tonic.

2nd. The scale of every key has for its precadence the cadence of the key of which its 5 is the tonic, to which it has to add its own 4.

3rd. The two principal notes, 4—6 of the transcadence of the key, grounded on the 4 of every scale, are the extreme notes 2—7 of the precadence of that primitive scale; and they are also the notes 3—5 of the cadence of the key grounded on the 5 of that same primitive scale.

4th. The two first notes, 2—4, of the precadence of the first *derivation* by fourth of a primitive scale (viz. of the precadence of the scale grounded on the note 4 of any other scale), are the higher notes, 5—7, of the precadence of that primitive scale; and they are also the two lower notes, 1—3, of the cadence of the first *derivation by fifths* of that primitive scale (viz. of the cadence of the key grounded on the 5 of that same scale).

5th. The scale of any key finds its cadence (increased with its 7) in the precadence of its first *derivation by fourth.*

6th. The scale of any key finds its transcadence (increased with its 2) in the precadence of its first *derivation of fifth.*

7th. The transcadence of the first *derivation by fifths* of any scale—in other words, the transcadence of the key grounded on the note 5 of any scale (in that case called primitive), is the cadence of that primitive scale: the numbers only are changed.

8th. The precadence of the first *derivation by fifth* of a primitive scale contains the complete transcadence (increased with the 2) of that primitive scale, and also the complete cadence, besides the 6 of the key first *deriviation by fourth*, of a primitive scale.

9th. The precadence of any key, second *deriviation by fourth* of a primitive scale (as of the key of Si, B, with regard to the key of Do. C), contains the complete transcadence of that primitive scale, besides its 3; and also the complete cadence, besides the 7 of the key, first *derivation by fourth* of the primitive scale, of which it is itself the second derivation.

10th. The scale of every key has for its precadence the cadence of the scale of which its 7 is the tonic, with addition of its own 5. Observe that the scale, having for tonic the 7 of a primitive scale, is always the first derivation of the scale formed on its 4; the numbers only are changed.

11th. The notes 3—5 of the cadence of any primitive scale are always the notes 4—6 of the transcadence of the key grounded on its 7; viz. of the key first derivation of the scale grounded on its 4; and also the transcadence of any primitive scale, besides its 3, always forms the precadence of the key grounded on its 7.

12th. The scale of every key has in its transcadence two notes of the cadence of the scale the tonic of which is its own 2. Observe that the scale having for tonic the 2 of a primitive scale, is always the first derivation of the scales formed on its 5.

13th. The scale of every key has for its precadence (incomplete, through the absence of its 4) the transcadence of the key grounded on its 2, which is its second *derivation by fifth*.

14th. The scale of every key has for its cadence (increased with its 6) the precadence of the key the tonic of which is its own 2.

15th. The scale of every key finds in the cadence of its third *derivation by fourth* (viz. in the cadence of the key grounded on its 3, which key is the second one derived from the scale of its 4) the notes 3—5 of its own cadence, and the notes 5—7 of its own precadence.

16th. The scale of every key finds in the transcadence of its third *derivation by fourth* the notes 1—3 of its own cadence; and

also, in the precadence of that third *derivation by fourth*, the two principal notes 4—6 of its own transcadence, and the two extreme notes 2—7 of its own precadence.

17th. The scale of every key finds in the cadence of its third *derivation by fifths* (viz. in the cadence of the key grounded on its 6, which key is the second one derived from the key of its 5) the notes 1—3 of its own cadence, and the notes 1—6 of its own transcadence.

18th. The scale of every key finds, in the transcadence of its third *derivation by fifths*, the two principal notes 4—6 of its own transcadence, increased with its own 2; and also, in the precadence of that third *derivation by fifths*, its own precadence, bereft of its own 4, in lieu of which it finds its 3.

CHAPTER IV.

POLYTONISM AND POLYTONOGAMMISM.

§ 12. Every sound of the sonorous space can be taken as first sound; that is to say, as key-note or *tonic* of a heptachord, or gamut, or diatonic scale. This truth, which has already struck our reader's eye, at § § 27 and 49 of the *Prolegomena*, is expressed by the word *Polytonism*, which means plurality of tones, or of *intonations*. This fruitful fact of the capability of any perceptible sound of becoming the basis of a distinct diatonic gamut, has led to the formation of the word *Polytonogammism*, the signification of which is *plurality* of *intonations and gamuts*. Polytonogammism, therefore, may be represented to our imagination and understanding under the image of the sum of dots or atoms which, thrown into the immensity of space, form in it lines in all directions; to which lines we suppose the quality of being sonorous. Our supposition is, consequently, that each of these sonorous dots or atoms, each of these intonable sounds, different from mere noise, is the tonic or key-note of the heptachord, or common scale, represented by the seven figures 1, 2, 3, 4, 5, 6, 7, octaved without limits in both the grave and the acute. Our reader will now clearly

understand, without any doubt, that all the possible sums of those diatonic scales in the two modes, the totality of intonations and keys, in perfect gammic progression or scales, are that which we shall henceforth name *Polytonogammism*. We say *perfect*, because it shall be proved in the course of this work that neither the irregular minor scale, in which the places of the semitones are altered in descending (see the note to § 40, page 32), nor the chant *a Cappella*, or *Facistol* music, nor the chromatic and the enharmonic progression, wrongfully called *Genera*, contribute in the least to the formation of melody; and that they, consequently, have nothing to do with harmony, counterpoint, nor musical composition. It shall be proved that the common heptachord, or diatonic gamut of seven sounds, is the only true genus, because it is the only one that is generative: it is the sole regulator of both melody and harmony. Those seven sounds which compose the gamut, or the tonogamic potency, in any elevation whatever supposed to be central between grave and acute, are called the natural *scale:* if raised a semitone, it takes the name of the *sharpened scale;* and if lowered a semitone, that of the *flattened scale:* but clear it is, that those three scales are only one, the progressive order of which receives no more alteration than its essence. Just the same as any word remains the same, though written three times in three different characters. From the application to each of the seven primitive sounds or notes, *Do, Re, Mi, Fa, Sol, La, Si,* of those three degrees, viz. flattened, natural, or sharpened, results the multiplication of seven by three, which produces the 21 nominal sounds that fill up the interval called *octave*. And as all and every one of these 21 nominal sounds can be taken as note 1, or *tonic*, or key-note of the common scale, we say that the common scale is contained 21 times in the octave. This accumulation of scales in a portion or fragment of the sonorous space, will be the *Polytonogammism* by which the whole mechanism of nature in all musical operations shall be explained to us in the application which we shall make to it of them all. The following table presents the 21 scales duplicated, viz. in the minor and the major mode, which amount to 42 exhibitions of Polytonogammism. As the table is destined for the use of students, we have substituted in it, to the double flattened and double sharpened notes, their equivalent natural sounds, which our reader already knows, and may see again in the *Table of cyphering of gamuts*, inserted in Chapter II. § 6, page 95: moreover, had we marked the double sharps, on what account should we have omitted the triple ones? But, as our

POLYTONOGAMMISM

REPRESENTED

BY THE ENHARMONIC DIVISION,

OF THE OCTAVE.

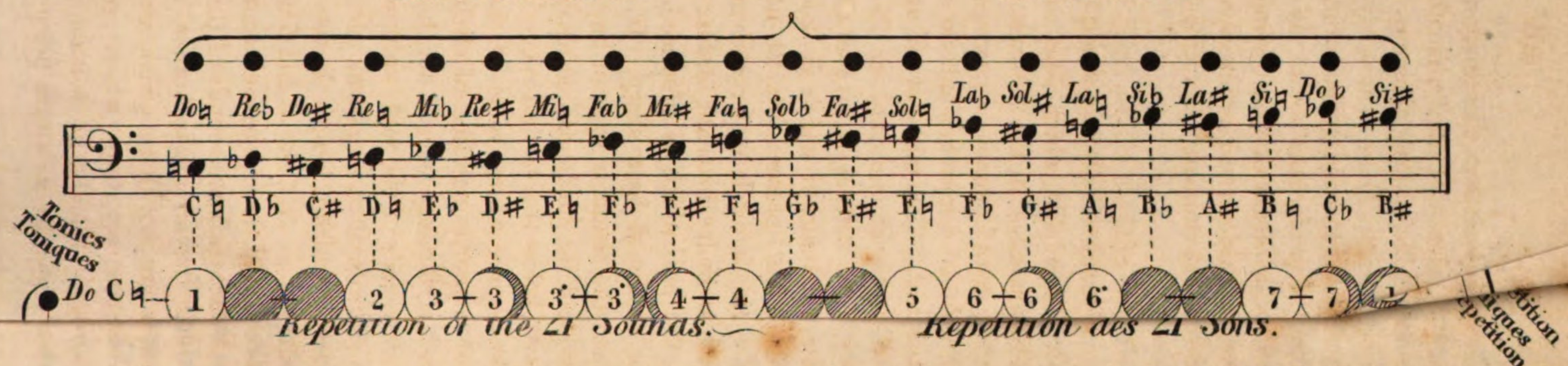
LE

POLYTONOGAMMISME

REPRESENTE PAR LA DIVISION

ENHARMONIQUE DE L'OCTAVE.

THE 21 SOUNDS. LES 21 SONS.



reader has learned that the third of *Fa* must always be *La*, he necessarily knows that the minor third of *Fa*♭ is *La*♭♭, and not *Sol*♮, as the table of Polytonogammism substitutes it for the sake of more simplicity. These facts solely belong to etymological orthography, which, in music, remains indifferent to the ear, and is only visible to the performers' eyes. We highly condemn the barren vanity or the whims which have sometimes impelled pedantic composers to use that musical orthography which is bristled up with both useless and cumbersome accidents.

Directions to use the Table of Polytonogammism.

§ 13. This table, which does not contain more sounds than the twelve included in the heptachord under 21 different names, is, within a small compass, a representation of the immense number of sounds comprehended in nature, and appreciable by the human ear. This table, of six or eight inches square, can be supposed to be of one yard, or 25 feet, or one mile square; and such as it is, it suffices to give an adequate idea of the Polytonogammism, the limits of which are known only to God.

The first line presents the 21 nominal sounds of the scale or key of Do, C natural, major and minor, enharmonically placed, according to their chromatic order: and so, in the homogeneous sounds, the one which is produced by a flat is expressed before the one produced by a sharp. If, therefore, the reader wishes to find out the complete scale of any key whatever, he will, in the first line, look for the denominating circle of that scale. Let him afterwards follow the vertical range headed by that circle, until he finds the number 1, or tonic of the key which he seeks after. Then, in the horizontal line of circles, one of which contains the number 1 of the key sought for, he will find all the diatonic and legitimate sounds of the said scale, with the number belonging to each of them, written in a blank circle. Besides those nine blank circles, five of which belong to the two modes—two to the minor, and two to the major—viz. the 3 and 6 which bear a dot at their right side, he will find the enharmonic sound, which, as being equivalent to one of the legitimate sounds of the scale, is joined to it with a hyphen, but has an inside border, which warns the reader that these notes are not those which are to be written in that scale, but, on the contrary, those which are joined to them and have no inside border. Finally, he will find, in circles totally darkened, the sounds which by no means belong to the scale in question.

The diatonic order will commence in its ascendant progression, by beginning the perusal of the line from the tonic, or 1, towards the right, and concluding it by reading from its extreme left, to the number 1 aforesaid.

If the reader wishes to know what number that tonic bears in any other scale or key, he has nothing to do but to go up or down along the vertical range that contains it, and he will find, 1st. the number which it bears in any scale whatever; 2ndly. if it be enharharmonic or legitimate; and 3dly. if it be foreign to, viz. false in it.

I wish to inquire, for instance, which are the sounds, either legitimate or enharmonic, of the key of *Mi*, E natural major; or what are the sounds false in it, as foreign to it. I look in the first horizontal line for the *Mi*♮, and I find it in the seventh circle. I therefore go seven circles down, following the seventh vertical range, and in the seventh horizontal line I find *Mi*, A natural, as tonic, number 1. If I wish to know what number that tonic bears in the key of *Do*, C, I go up the same vertical range which I have just descended, and I find, in the first horizontal line, that the said *Mi*, E, is number 3, and a legitimate sound of the key of *Do*, C. If I wish to ascertain what office that *Mi*, E, fulfils in the scale of *La*, A♭ minor, I go down the same seventh vertical range to the fourteenth horizontal line, where I see that this *Mi*, E, is placed within a circle of inside border, as being the enharmonic sound of *Fa*, F♭, the legitimate six of the said scale of *La*, A flat minor. I now wish to find out what the same *Mi*, E natural, is in the scale of *Si*, B flat major; I then continue going down the same vertical range till the seventeenth horizontal line, and there I meet with an entirely darkened circle, which is for me the proof that the *Mi*, E natural, as a stranger in the key of *Si*, B flat major, is, for this very reason, false in the scale of the said key, and cannot be employed in it.

Moreover, if I wish to know what office the *Sol*, G natural, fulfils in the gamut of *Do*, C natural; I seek for the *Sol*, G natural, in the first horizontal line, and I find that it is the number 5, a legitimate sound or note of the said gamut or key, as it is indicated by the thirteenth circle of the horizontal line or key aforesaid; it being a fact that every one of the 21 horizontal lines is a different scale or key, as every one of the 21 vertical ranges presents one same sound or note in all the successive transformations which it undergoes through the 21 keys, from that of *Do*, C natural, to that of *Si*, B sharp. Have I a wish to know what

situation this *Sol*, G natural, fills, in the key of *Mi*, E natural, I look for *Mi*, E, in the first horizontal line, and, meeting with it in the seventh circle, I infer that the seventh horizontal line is the one of *Mi*, E natural. I therefore ascend from the thirteenth to the seventh horizontal line, where I find, at the thirteenth circle, the *Sol*, G natural, the number 3 of the key of *Mi*, E natural; but that it is the key of *Mi*, E natural minor, because the 3 has no dot; for it should have one, if it were of the major mode. The following inference is, that, ascending a semitone, viz. going to the *Sol*, G sharp, that *Sol*, G sharp, will be the number 3 of the key of *Mi*, E natural major; and so, if in the seventh horizontal line I go on to the fifteenth circle, I shall find in it a *Sol*, G sharp, marked 3, with a dot at its right. Do I desire to ascertain in what capacity the *Sol*, G natural, acts in the scale of *Si*, B flat, I go down along the thirteenth vertical range to the seventeenth horizontal line, in which I find, in the thirteenth circle, that the *Sol*, G natural, is the number 6 of the said scale of *Si*, B flat, and in the major mode, because the 6 has a dot at its right. The consequence which I draw from this fact is, that by descending a semitone, viz. seeking after the *Sol*, G flat, I shall find the note 6 of the gamut of *Si*, B, minor mode: and, indeed, retroceding in that seventeenth horizontal line, I see that the eleventh circle presents a *Sol*, G flat, marked with the figure 6, without any dot. If, yielding to a curiosity very natural to any one who seeks after learning, I continue going back, or towards the left, in that same seventeenth horizontal line in which I am, I find in the second circle that the *Re*, D flat, and in the fourth circle that the *Re*, D natural, are both the number or note 3 of the key of *Si*, B flat; but that the former belongs to the minor mode, because its 3 bears no dot; and that the latter belongs to the major mode, because its 3 is provided with the dot, which the other has not.

The word repetition, which is read after the horizontal lines and below the vertical ranges, means that all the octaves of that sound bear a same number with it, in consequence of their harmonical identity.

Whence it results, that, *for harmonic truth there are no inverted intervals*. For instance, 1—3 is equal to 3—1, and 2—5 is equal to 5—2, &c.

Consequently, the word *repetition*, also written at the end of the diagonal line on which the 21 sounds are placed, all bearing the number 1 (viz. the 21 tonics), means that all their octaves are as many other tonics.

§ 14.—*Observations and Rules drawn from the Table of Polytonogammism.*

1st. As often as a key, scale, or gamut, in order to preserve the syllabical order of the diatonic progression, *Do, Re, Mi, Fa, Sol, La, Si, Re, Mi, Fa, Sol, &c. Mi, Fa, Sol, La, &c.* such as marked in the table of the *cyphering of gamuts*, is reduced to the necessity of resorting to double sharps or double flats, it does nothing but bring a complicated and false name, instead of a simple and true one; nothing but forcing nature to establish scales which do not exist in it, and to which it is consequently reluctant.

2nd. Those scales can only be established by means of the childish and useless substitution of the names of certain notes to those of other notes, for the sake of musical orthography, in a vain and unavailable parallelism.

3rd. It is, therefore, much more rational to say that those scales do not exist in which the regular order of the syllabical denomination is to be interrupted unless double sharps or double flats come, than to oblige the composer, the performer, or the reader, to call Paul by Peter's name, and to use as black that which is white.

4th. And so the ingenious author of the *Table of Polytonogammism*, General Virues, in preserving the twelve intruding scales, to keep complete the 21 keys, instead of only 15 in each mode, for the purpose of beautifully forming his admirable *Table of Polytonogammism*, which without the 21 keys he could not have so symmetrically contrived, has not hesitated to interrupt and sacrifice (necessary, indispensable even, as it is) the regular diatonic succession of the syllabical names, rather than to preserve and maintain it with the spurious assistance of double sharps or double flats. Thus, in the six scales of Re, D♯—Mi, E♯—Fa, F♭—Sol, G♯—La, A♯, and Si, B♯, of the major mode; and in the six keys of Do, C♭—Re, D♯—Mi, E♯—Fa, F♭, Sol, E♭, and Si, B♯, of the minor mode, which cannot, without double accidents, march in their proper usual syllabical order, that order has been violated, rather than introduce double accidents. This has been beginning twelve scales to fall into twelve others: it has been causing to set out on a journey of several miles, a child, or an invalid, able to walk only a few steps. But, of two evils, the smaller was to be chosen; and any outrageous nonsense was preferable to the more outrageous fault of consenting to the introduction of double accidents in the formation of scales. Composers, however, have done

justice to those twelve scales above-named; they are left aside, totally unemployed; I propose, therefore, their total abolition.

5th. From the close and minute examination of the *Table of Polytonogammism*, it is deduced that the only two notes of the gamut, having their three scales, natural, sharp, and flat, possible without double accidents, are *Do*, C, and *La*, A, because they are the primitive scales, the former of the major, the latter of the minor mode; and that the other six notes have only two scales possible without double accidents, viz. either natural and sharp, or natural and flat.

6th. In the major mode, the 7 of the key of Re, D♯, ought to be Do, C double sharp. The *Table of Polytonogammism* produces it under the name of Re, D𝄪.

In the key of Mi, E♯, the 2 is named Sol, G𝄪, instead of Fa, F double sharp.

The note 4, which, in the key of Fa, F♭, should be Si, B double flat, does, in the table, appear with the name of La, A natural; the 7 of the key of *Re*, D♯, ought to be *Do*, C double sharp. The *Table of Polytonogammism* produces it under the name of Re, D natural.

In the scale of Sol, G sharp, the 7, which ought to bear the name of Fa, F double sharp, goes under that of Sol, G𝄪.

The note 3, in the key of La, A sharp, should be Do, C double sharp; it is, however, marked in the table as Re, D𝄪.

The same Re, D𝄪, is written again in lieu of Do, C double sharp, as note 2 of the scale of Si, B sharp.

7th. Let us now proceed to the minor mode:

In the scale of Do, C♭, the note 3, which ought to be Mi, E double flat, is written Re, D𝄪.

The note 7, instead of appearing in the key of Re, D sharp, under its proper name of Do, C double sharp, appears as Re, D natural.

In the scale of Mi, E sharp, the note 2 should be written Fa, F double sharp. The table, however, presents it as Sol, G𝄪.

In the scale of Fa, F flat, the note 3, instead of being written La, A double flat, as it ought to be, is designated as Sol, G𝄪.

The note 3 should be Si, B double flat, in the key of Sol, G flat; the *Table of Polotonogammism* marks it La, A𝄪.

And finally, in the key of Si, B sharp, the note 2, Do, C double sharp, is not thus written; the author of the table presents it as Re, D𝄪.

8th. The chief object of the foregoing observations has not

been to illustrate the twelve scales aforesaid, which are totally unusual and despicable in themselves; it has been to elucidate and thoroughly explain the *Table of Polytonogammism*, from which wonderful and varied consequences are to be soon and infallibly perceived by the intelligent reader. He will do well, in the meanwhile, in order still to enlarge his instruction on this matter, to look out in the following chapter for the Typometric Table, and the Rules drawn from the observations, and annexed to it.

CHAPTER V.

TYPOMETRE.

§ 15. As Harmony consists in the union of one or more sounds to another sound previously determined, and constituting part of the *melody* or *air*, it is necessary to determine the sounds which may properly be joined to each other: and that is done by a general rule, as exhibited in the

MELO-HARMONIC TYPOMETRE,

APPLICABLE TO THE

FORTY-TWO SCALES OR KEYS OF MUSIC,

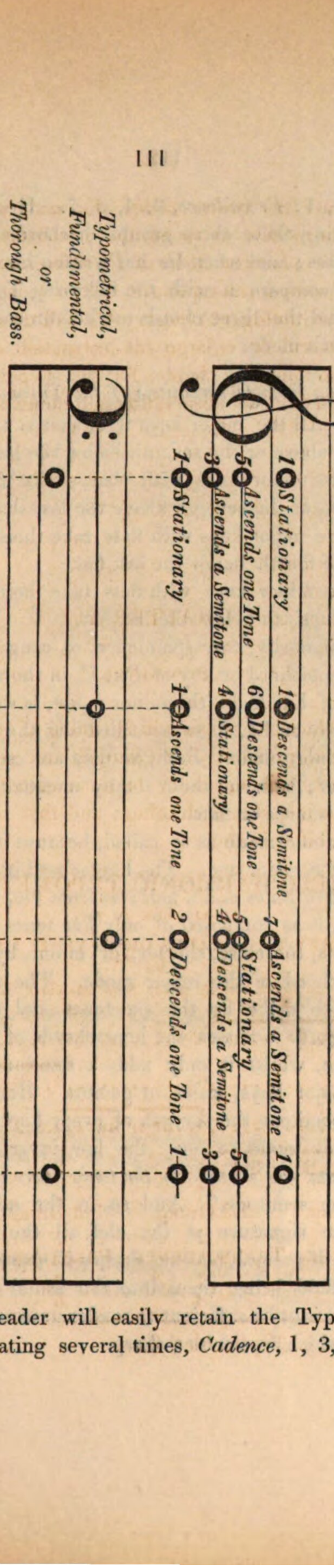
OR

Distribution of the Seven Sounds of the Scale into three Harmonical Groups.

Notes.....	1^{8ve}..tie *or* link..	1^{8ve}	7.....	.....	1^{8ve}
Notes.....	5.....	6.....	5..tie *or*	link...	5
Notes.....	3.....	4..tie *or* link..	4.....	.....	3
Notes.....	1...tie *or* link..	1.....	2.....	.....	1
	1st Group.	2nd Group.	3rd Group.	1st Group.	
Names..	CADENCE.	TRANSCADENCE.	PRECADENCE.	CADENCE.	
	1	4	5	1	

Typometrical Bass.

Typometrical, Fundamental, or Thorough Bass.



§ 16. The reader will easily retain the Typometre in his memory, by repeating several times, *Cadence*, 1, 3, 5, 1: *Trans-*

cadence, 1, 4, 6, 1: *Precadence*, 2, 4, 5, 7. He should exercise himself in marking these three groups or chords on the stave, in any key he pleases; and when he has written his example for one key, he should compare it with the following Typometric Table, where he will find the three chords marked on each of the *fifteen keys* in use in each mode.

Rules drawn from the Observations of the Typometric Table.

§ 17. 1st. All the major keys with sharps take their names from the second above or the seventh below the last sharp.

2nd. All the minor keys with sharps take their names from the second below or the seventh above the last sharp.

3rd. All the major keys with flats take their names from the fifth above or the fourth below the last flat.

4th. All the minor keys with flats take their names from the third above or the sixth below the last flat.

5th. The similarity, correspondence, or congeniality between the primitive heptachord or key of Do, C, in the major mode, and the heptachord of La, A, in the minor mode, is so striking, that it has caused the key of La, A, to be called also the primitive heptachord of the minor mode. Both, as they are used, have no accidents at the clef; both, in their totally unusual forms, have the same number of sharps or flats.

6th. The minor mode is so called, because it is really minor or shorter than the major one. The heptachord in the major mode is composed of five tones and a half; as from Do, C, to Si, B. In the minor mode, it is composed of only five tones; as from La, A, to Sol, G; and is, therefore, shorter, or minor, by one semitone, than the heptachord of the major mode. The repetition of the tonic necessary to make up the six tones, and to complete the octave, consequently increases the heptachords of the minor keys by a whole tone, whilst it only adds a semitone to the heptachords of the major keys, scales, or gamuts. Hence the necessity of raising by a semitone the seventh of every heptachord, scale, or key, of the minor mode, to obey the law invariably in the two modes, that "*from the seventh to the tonic there can be no* greater interval than one semitone." And so, in the minor mode, independently of the signature at the clef, all the sevenths, if flat, become natural; if natural, become sharp; if sharp, become double sharp, which would bring them into the sound of the following natural note, and is quite sufficient to render unusual any minor key the seventh of which would be a sharp.

TYPOMET

7th. The second key of the major mode, Re, D, and the second key of the minor mode, Si, B, have equally for signature at their clefs either two sharps or five flats.

8th. The third key of the major mode, Mi, E, and the third key of the minor mode, Do, C, bear at their clefs the same signature, viz. three flats or four sharps.

9th. The fourth key or scale of the major mode, Fa, F, and the fourth key of the minor mode, Re, D, are also characterised by the same accidents, as both have at the clef either one single flat or six sharps; in which latter case they are, and most justly too, very seldom, indeed almost never, used.

10th. The fifth gamut or key of the major mode, Sol, G, and the fifth key of the minor mode, Mi, E, are equally designated at their clefs by one single sharp or by six flats, in which latter form they are with great reason, quite as rarely used as the major key of Fa, F, or the minor one of Re, D, with six sharps.

11th. The major key of La, A, and the minor scale Fa, F, are not less identical in their signature and aspect than all the preceding keys of the major mode, with their corresponding or relative scales of the minor one; for La, A major, as well as Fa, F minor, are marked at the clef with either three sharps or four flats.

12th. Finally, the same congeniality or kindred between the sympathetic keys of Si, B, of the major mode, and Sol, G, of the minor mode, is equally conspicuous as between the above-named corresponding scales. The major key of Si, B, and the minor one of Sol, G, bearing both the clef-signature of two flats or five sharps.

13th. The relation of the keys or scales between mode and mode is that of one minor third below, or one major sixth above; as is the case between the first, the second, the fourth, and the fifth scales; or that of one major third below, or one minor sixth above; as is the case between the third, the sixth, and the seventh scales. As the third and the sixth are always acted upon by the same rules; always subject to the same impressions; always tinged with the same colours; in one word, always sympathetic; when the sixth above is major, so is also the third above; and, as the rule of inversions never fails, when the third above is major, so surely minor is the sixth below. Here is the complete revelation of the long unknown secret why the numbers or sounds 3 and 6 of every gamut, scale or key, are the modic sounds and number; why, if the intervals which they mark are major, the mode is major; and why, on the

contrary, the mode is minor if the intervals marked by those numbers, or notes 3 and 6, are minor ones.

14th. Observe that, in the two modes, whilst the second scales bear the mark of two sharps or five flats, the seventh scales are signed with two flats or five sharps. Observe that, if, making abstraction of the scales, you consider their tonics, Re, D, and Si, B, in the major mode, as numbers 2 and 7 of the key of Do, C; and Si, B, with Sol, G, in the minor mode, as numbers 2 and 7 of the key of La, A; you will see with amazement that the inversion of the signatures follows the inversion of the intervals; since an inverted second becomes a seventh, and *vice versâ*. Observe that the same inversion takes place from the second major scale, Re, D, to the seventh minor scale, Sol, G, as from the second minor scale, Si, B, to the seventh major scale, Si flat, B. Also observe that the tonics of the keys or gamuts, about which these facts are noticed, are Sol, G, Si flat, Re, G, B flat, D, the complete cadence of one of them, viz. the minor scale of Sol, G; that they are equally precadential in the primitive key of the major and the primitive key of the minor mode, being 2, 5, 7, in the former, and 2, 4, 7, in the latter; so that the three tonics of the second and the seventh scales do not give the 4 to the precadence of the primitive major key, nor the 5 to that of the primitive minor scale.

15th. Following the sympathy above alluded to (see Rule 13th), between the third and the sixth of one same gamut, or of two corresponding or relative scales of distinct modes, the third and the sixth keys are liable, in the two modes, to the same influence and to reciprocal inversions; for whilst the third major scale, Mi, E, and the third minor, Do, C, are armed with three flats or four sharps; on the contrary, the sixth, La, A, and Fa, F, have on their shields three sharps or four flats; and if you consider the tonics of these four scales as independent from them, they will produce the complete cadence of the primitive minor key, as well as of the sixth major scale, and also their two modic notes. They will also present the complete cadence of the sixth minor scale, increased by its 7 or sensible, and the transcadence of the primitive major key, and also its two modic sounds. They will, finally, supply the complete transcadence of the third major and of the third minor scales, besides the two modic sounds of the latter.

Let us now cross these scales, as we have done the second with the seventh gamuts, and we shall find that the same inversions take place from the major scale of Mi, E, to the minor scale of Fa, F,

as from the major key of La, A, to the minor one of Do, C. What safe and unerring conductors are these facts in the choice of modulations!

16th. And now let us enquire into more facts, proceed to fresh observations, and from them deduce new rules.

No scales now remain but the fourth and the fifth; and mark that they are between them subject to the same inversions, to the same parallelism, to the same crossing, as the second with the seventh, as the third with the sixth gamuts. Only the circle becomes narrower. Whilst the fourth scales write on their banners one flat or six sharps, the fifth gamuts inscribe on theirs one sharp or six flats. The same inversion, therefore, takes place from the major fourth, Fa, F, to the minor fifth, Mi, E, as from the minor fourth, Re, D, to the major fifth, Sol, G. If we now consider the tonics of these four scales as isolated from them, we shall not find in them, as we did before in the others, a variety of cadential, transcadential, or precadential chords; but only the diatonic progression of the four inside sounds of the gamut, Re, Mi, Fa, Sol, D, E, F, G. The space between each other becomes too short for them to move about.

§ 18. 17th. Let us here detain our eyes and minds on the supremacy which the sounds, 1, 4, 5, assume every where as constitutive of scales, a supremacy which is of course preserved by their own gamuts. We almost hear the primitive scales of Do, C, and La, A, say:—"We want no accidents; but, if any, we shall "take them all, whatever they may be; and no other scales, except "ourselves, shall be able to exist without any, or to walk with them "all at once." Next after them come the fourth and the fifth scales, saying:—"For us, one accident of one kind, or six of the "other." Afterwards, and more remote from the primitive scales, come the second and the seventh gamuts, which make their appearance with two accidents of one nature, or five of the other; and finally, still more distant from the primitive keys, we see the third and the sixth scales with this motto on their foreheads: "Three accidents of one sort, or four of the other." We abstain from further reflections on the essence of both the major and the minor scales, as the foregoing observations are sufficient to suggest to the reader a great many more.

18th. Any major key with sharps becomes minor by taking away three sharps; and, *vice versâ*, any minor key with sharps becomes major by adding three more sharps.

19th. Any minor key with flats becomes major by taking away

three flats; and, reciprocally, any major key with flats becomes minor by adding three more flats.

20th. In those additions or diminutions, sharps are worth flats, and flats are equal to sharps; for instance, we want to pass from the major into the minor key of Sol, G. To take off three sharps from that key which does not muster more than one, we begin by retrenching that one, and in its stead we place two flats at the clef; then one sharp less, and two flats more, is the same thing as three sharps less; and, sure enough, the key of Sol, G, in the minor mode, bears at its clef two flats or five sharps. This sole example precludes the necessity of any more.

§ 19. 21st. The student will find in this table the typometrical division applied only to the thirty keys which, in the two modes, are either in use or at least practicable. The twelve remaining scales have been overlooked, because the author's opinion is that they should be entirely erased from musical writing; that they are never mentioned in elementary works, but for the sake of written symmetry or nominal analogy; for as often as, to be able to proceed diatonically, a scale is obliged to resort to double sharps or double flats, it becomes absurd; as often as it falls into a simpler key, with no more difference than that of bearing more complicated names, it goes out of common reason.

§ 20. 22nd. This typometrical table is divided into two halves; the one for the major, the other for the minor mode. Each half is distributed into three parts; the left one contains the names of the keys which are called *natural*, *sharp*, or *flat*, from their tonic bearing one or the other of these three characters; the central part contains the three chords into which the melo-harmonic typometre divides the octave in every scale; and the right part contains the indication of the other form or forms of every key, which forms the reader has already found at length in Chapter V, § 48, of the *Elements*, pp. 48 and 49, and in the Tables, facing pp. 95 and 96.

23rd. With the assistance of this table, the young composer will immediately find, at one glance, all the legitimate chords of every key, all the legitimate sounds of every chord. He will see with the same promptness the connection and the differences of the relative keys, which, in distinct modes, bear the same signature; and of the homogeneous scales, which, with the same tonic or name, bear distinct signatures in the two modes; which homogeneous scales the foregoing rules, 18th, 19th, and 20th, have thoroughly explained. He will find ready-made the chords of those keys which the table of heptachords designates to him as eligible or unacceptable, ac-

cording to their greater proximity to, or distance from, the key which he wishes to leave. This typometrical table, in one word, assembles, joins, and links together, each in its proper place, and presents ready for use all those elements of euphony, already shown in their proper light, but widely spread by General de Virues, in his admirable Table of Polytonogammism, which the reader has found at page 105 of this work.

24th. Let the student not forget that *relative keys* are not only those which in the two modes appear with the same accidents at their clef, but that a scale is also called *relative* to any other scale in the diatonic progression of which it finds, without wanting any alteration, its own pure cadence, viz. its notes 1, 3, 5.

25th. Lastly, from the anterior rule it follows, as a natural consequence, that the relative scales of any other scale taken as primitive or anterior scale, or also as a starting spot, are those scales the tonics of which are, in the minor mode, the second, the third, and the sixth; in the major mode, the fourth and the fifth of the primitive or anterior key. The minor scale or mode of the tonic, or note 1, cannot, in our opinion, be considered as a relative key; because it might be considered naught else than an inversion of the scale of the major mode, without any other change than that of having its two semitones in different places.

With the Table of Heptachords, this Typometrical Table, the Rules annexed to both, and the *only and absolute Rule* of Modulation and change of key, musical composition becomes rid of and freed from its principal difficulties.

§ 21. After the study of the Typometric Table, our reader being acquainted with the notes that may properly be joined to each other, it is evident that he will already be enabled to harmonize every melody the key of which is not changed, *i.e.* in which no sound enters but those belonging to the same scale. Let us suppose, for instance, that melody to be in the key of *Do*, and to be formed of the following notes, *Mi*, *Re*, *Mi*, *La*, *Si*, *Do*. We shall write the names of these notes, and place their numbers above them.

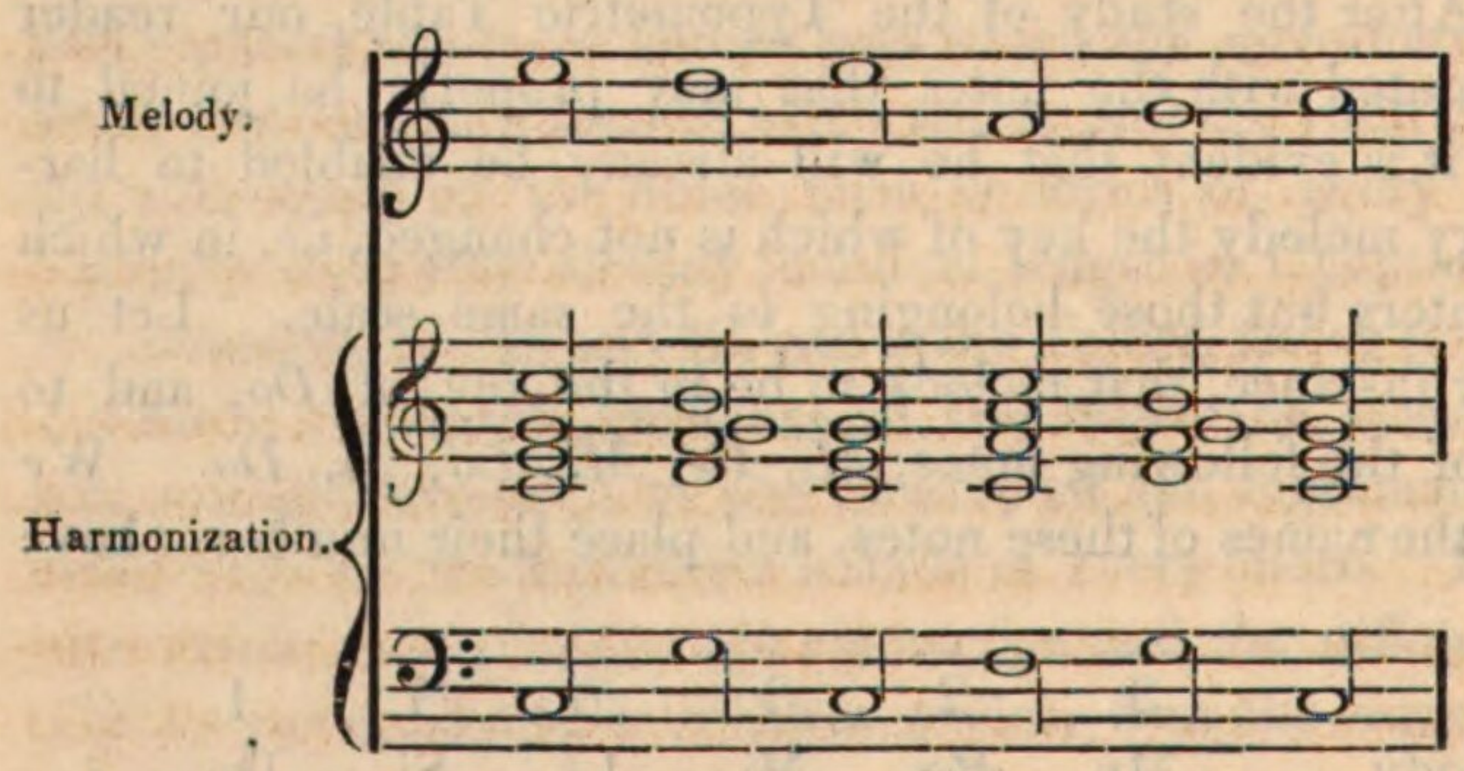
	3·	2	3·	6·	7	1
Melody.....	Mi,	Re,	Mi,	La,	Si,	Do.

And it will be immediately seen that to the first note, *Mi*, 3, belongs for its harmonization the first group, *i.e.* the *Cadence*, because it is in this group that the number 3 is to be found; that the second note, *Re*, 2, must have the *Precadence* for harmonization, because it

is in the precadence that the number 2 is to be found ; and so on with the other notes, according to the number attached to them, so that the whole passage will be completed ; as in the following example :

	3·	2	3·	6·	7	1 8ve
Melody.....	Mi	Re	Mi	La	Si	Do
Harmonization..	Do 1 8ve	Si 7	Do 1 8ve	Do 1 8ve	Si 7	Do 1 8ve
	Sol 5	Sol 4	Sol 5	La 6·	Sol 5	Sol 5
	Mi 3·	Fa 4	Mi 3·	Fa 4	Fa 4	Mi 3·
	Do 1	Re 2	Do 1	Do 1	Re 2	Do 1
Typometrical Bass	Do 1	Sol 5	Do 1	Fa 4	Sol 5	Do 1
	Cadence.	Precad.	Cad.	Transcad.	Precad.	Cad.

The reader will write this example in music more easily than we have pointed out the names and numbers of its notes. He ought not to proceed further before he practises himself in several other examples, in order to familiarize himself with the above simple operation, and to strengthen the conviction he has already acquired ; and, if he plays the pianoforte, he will do well to play the *harmonizations* on it, singing the melody at the same time ; an exercise he should attempt, if only as a proof of the harmonizations he has previously written ; which he has probably done as follows :



CHAPTER VI.

RULES ON HARMONY.

§ 22. It may occur to the reader to ask, in case he should find in the melody the note 5, which belongs both to the first and third groups, how he can recognize which of these two groups it refers to, in order to give for harmonization either the *Cadence* or the *Precadence*. The answer is, that the following and preceding note clearly resolve his doubt. Let the melody be, for instance, *Sol, La, Sol, Sol, Sol ;* we here write it with its numbers :

	5	6·	5	5	5
Melody.....	Sol	La	Sol	Sol	Sol
	⋮	⋮	⋮	⋮	⋮
Harmonization.....	Cad.	Transcad.	Cad.	Precad.	Cad.
	⋮	⋮	⋮	⋮	⋮
Typometrical Bass.....	1	4	1	5	1

NOTE. In all the Examples in the major mode, which the reader should wish to render minor, he has nothing more to do than to flatten the notes 3 and 6.

Analysis or Explanation of the foregoing Example.

To the first *Sol* the *Cadence* is given for harmonization, because every melody begins with the *Cadence*, and also because that *Sol* is followed by the *La*, 6·, note of the *Transcadence ;* and the Typometer teaches us that the *Transcadence* follows the *Cadence.*

We harmonise the note *La*, 6·, with the *Transcadence*, because there can be no hesitation in that respect.

Then comes the *Sol*, 5, which is thrice repeated. As to the last time, there is no doubt that it belongs to the *Cadence*, because with this chord every piece of music is concluded, as well as begun. The last time but one belongs evidently to the *Precadence ;* for this, as the Typometer shows, should always precede the *Cadence.* As to the first of those three *Sol*, it is manifest that, although it might be harmonized with the *Precadence*, it is here preferable to use the *Cadence* for that purpose, that the *Precadence* may not be successively repeated. The reader will not remain three days before he regards this explanation as superfluous ; because he will naturally

be guided by practice, without reflection, and as it were by instinct, in all cases that may occur.

§ 23. However simple the geneuphonic doctrine might now appear to the reader, or to his master, we do assure them both that this first treatise will contain all that is essentially necessary, as they will hereafter see duly proved. The fundamental knowledge of every art is that of the materials employed by that art; this will be fully discovered in the Rudiments of Harmony, which will be found to impart to the reader a knowledge of the *uncouth harmonical matter*, and teach him how it is to be extracted from the mine in which it was concealed by the same hand that enclosed the diamond in the bowels of the earth.

CHAPTER VII.

THE SAME SUBJECT.

§ 24. We shall repeatedly advise our reader to trust to our word, were it only for three days, being certain that, at the end of that time, his conviction also will oblige him to believe us. But before he turns over another page, he ought to employ those three days in practical exercises on the doctrine contained in the two preceding chapters. When he will think himself thoroughly acquainted with it, he will probably make, of himself, the following observations, which are no less than standard Rules.

1. As we know that *the sounds in the octave are the same thing as the denominative sounds*, it follows that the *Cadence* neither has, nor can have, more than three different sounds—1, 3, 5; and that the three sounds of the *Cadence* compose a set of two thirds, without the mixture of any other interval. Now, *the interval of third being the only concord in music*, it follows that the Cadence is a sonorousness or consonant chord.

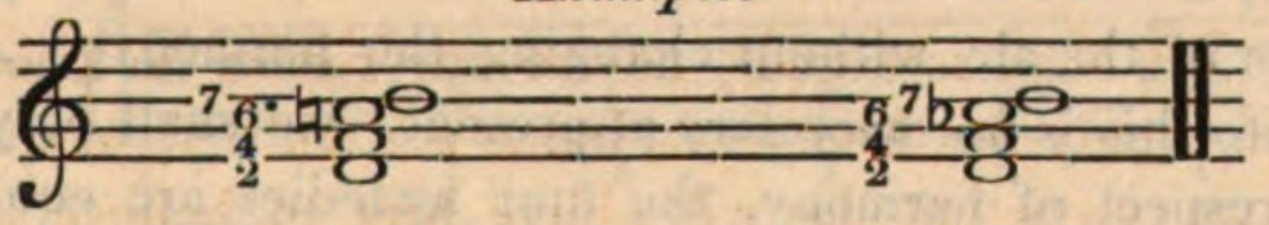
2. The *Precadence* having two of its sounds (4 and 5) forming the interval of second, and therefore not being composed exclusively of thirds, *is a dissonant chord.* Now, every chord not composed of two different thirds containing necessarily and exclusively

the dissonance of *second*, it follows that *there is no discordant interval in music except that of second.* This axiom should never be lost sight of; and let it be remembered, that two sounds, bearing consecutive numbers, as 4 and 5, or 1 and 2, invariably make a second, whatever may be their octaves.

The reader may have observed in the two chords, *Precadence* and *Cadence*, that the number 6, or the sound 6, of the scale, does not occur there, and that it is the only one which is wanting. In fact, this sound 6, in the major mode, cannot have a place in the Cadence, because it is in the interval of *second* with the sound 5; and we know that the *Cadence admits of no dissonant interval.* It may, however, form part of the *Precadence*, for this *does not exclude dissonance;* but, from its introduction into the complete Precadence, it would happen that the Precadence would have three seconds instead of one. This is obviated by leaving out sound 5, by which the nature of the Precadence is altered, and its composition then becomes as follows:

False Precadence.	Minor Precadence.
7	7
6· major.	6 minor.
4	4
2	2

Example.



These Precadences are never used when the Cadence ought to conclude the musical period. Their employment is, however, so rare, that this is hardly the proper place to speak of them.

III. Since music contains only *Precadence* and *Cadence*, it follows that there can be no melody therein which is not produced either by the repetition of one of these two chords, or by their alternation or succession.

§ 25. IV. We ought to have ascertained, by the solfaying (see the Elements, Chapter V, § 45, page 40), that every flat, every natural, or every sharp, applied to the first note of an accented part of time, changes the key.

Every chromatic sign, which raises a note a semitone, converts this same note into the note 7 of a new key. A sharp, for example, applied to a *Do*, C, presents the *Do*, C sharp, for

note 7 of the key of *Re*, D natural; a natural, applied to a *Mi*, E flat, presents the *Mi*, E natural, for note 7 of the key of *Fa*, F natural. Every chromatic sign which lowers the note a semitone, converts this note into note 4 of a new key. A natural, for example, applied to a *Re*, D sharp, presents the *Re*, D natural, for note 4 of the key of *La*, A natural; a flat, applied to a *Re*, D natural, presents the *Re*, D flat, for note 4 of the key of *La*, A flat. We do not wish the reader to weary himself with learning minutely all the results of this important truth; let him merely bear in mind, that every chromatic sign which raises, produces a 7; and that every chromatic sign which lowers, produces a 4.

§ 26. V. In every part of time of the measure, Harmony counts only the note which is on the Thesis, or accented part; the other notes, which occupy the remaining part of time up to the Thesis of the following part, are called *passing notes**; and, consequently, we never harmonize any other than the first note of each part of time.

§ 27. VI. Whatever may be the inversion of the precadence or of the cadence, these two chords never alter in value or function in harmonization, so that each of their four sounds may be articulated by any voice or instrument whatever. This diversified manner of presenting the chord in the partition, and of making it audible to the ear, is what is called *inversion;* and inversions only alter the expression of the air, without changing the harmony. A deeper insight into this is not necessary at present: we shall only observe that, in respect of harmony, the four melodies are equal. The names given to the different uses of the four melodies, viz. Bass, Tenor, Soprano, and Counter-tenor, merely express the difference of the octaves in which the instruments articulate their melodies.

§ 28. VII. Finally, every note of a given melody necessarily belongs to the scale in which it is written. Now, the scale of each key having only two chords, Precadence and Cadence, it follows that every note in a melody must belong to one of these two chords. It will be sufficient to remember that every note of an air is accompanied by the chord of which it forms a part, Precadence or Cadence. (See § 21, Chapter V.)

§ 29. Carefully bearing in mind the preceding rules, let our

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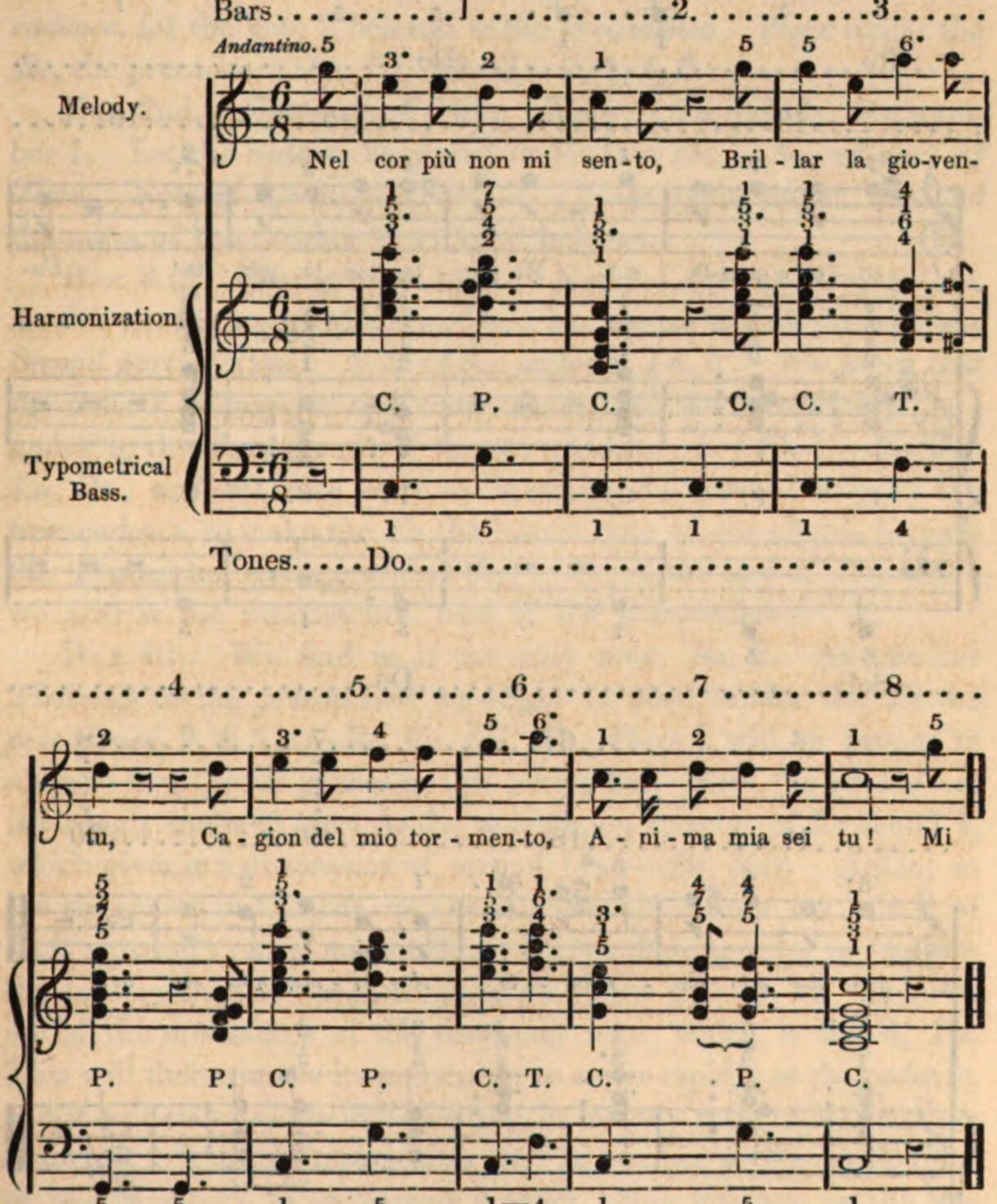
* See Elements, Chapter VI, § 62, Art. iii, and iv, page 59; and Prolegomena, § 70, page 86.

reader exercise himself in the harmonization of melodies written by others. It is proper for him to form these exercises on melodies that are not only pleasing, but well known to him. We here present him, as a guide, with one of these exercises applied to the celebrated

PAESIELLO'S CAVATINA,

" Nel cor più non mi sento."



9 10 11 12

piz - zi - chi, mi stuz - zi - chi, Mi punz-zi - chi, mi mas - ti - chi ; Che

P. P. C. C. P. P. C. C.

Re Do

13 14 15 16

co - sa e ques-ta si ? Me pie - ta, pie - ta, pie - ta ! *Ca-*

P. P. C. P. C. P.

Sol Do

5 6 7 8

17 18 19 20

gion del mio tor - men - to, A - ni - ma mia sei tu !

C. P. C. T. C. P. C.

Do

Exercise on the employment of the uncouth matter, containing the Analysis of the first eight bars, or first mediation of the foregoing Cavatina.

Bar 1st.—*First part of Time.* Note of the melody, *Mi.* This note bears number 3 in the scale of *Do.* Its harmonization, therefore, is the *cadence*, for the note 3 belongs to the *cadence.* Under this *Mi*, place the *cadence, Do, Mi, Sol, Do,*—1, 3, 5, 1. *Second part of Time.* Note of the melody, *Re.* This note, in the scale of *Do*, bears number 2. Its harmonization, therefore, is the *precadence*, for the note 2 belongs to the *precadence.* Place under the *Re*, the *precadence, Re, Fa, Sol, Si,*—2, 4, 5, 7.

Bar 2nd.—*First part of Time.* Note of the melody, *Do*, number 1. Let the *cadence* be placed under this *Do.* *Second part of Time.* Note of the melody, *Sol*, 5. Place again under this *Sol* the notes of the *cadence* to which it belongs.

Bar 3rd. *First part of time.* Note of the melody, *Sol*, 5. As this note is a part of the *cadence*, harmonize it with the *cadence.* *Second part of Time.* Note of the melody, *La*, 6·. We know that the note 6· belongs to the *transcadence*, and we accordingly place under it the four sounds of the *transcadence*, 1, 4, 6, 1,—*Do, Fa, La, Do ;* and we take care, by inverting the natural order of the *transcadence*, to make the *Fa* the lowest note of our chord, because the Typometer teaches us that the 4 (*Fa*, in the key of *Do*, where we are) is the fundamental bass of the *transcadence.*

Bar 4th. We find in it the only note, *Re*, 2. As number 2 belongs to the *precadence*, we ought to place under the *Re* the *precadence*, 2, 4, 5, 7—*Re, Fa, Sol, Si.* Here it will be proper to observe that the air pauses in this fourth bar. Now, the *precadence* is strongly inclined towards the *cadence*, on account of its sound 4, which gives it a dissonance of second (4, 5—*Fa, Sol*). Again, as the air pauses in this bar, and as the dissonance does not admit of such a pause, even momentarily, it follows that, in order to mark in the accompaniment the pause dictated by the melody, we ought to curtail the *precadence* of the dissonant note, which is the 4, *Fa.* This will then remove its propensity to arrive rapidly at the *cadence*, and it will wait quietly until the tune or melody resumes its progress (which it effectively resumes, as well as number 4, *Fa*, at the end of this very bar), to accompany it again, being followed by the two other chords which, with the *precadence*, constitute the whole har-

mony, and which it always precedes, according to that invariable typometrical order—*Precadence, Cadence, and Transcadence**.

Bar 5th. *First part of Time.* Note of the melody, *Mi*, 3, *cadence.* Place the same harmonization as in the first part of time of the first bar. *Second part of Time.* Note of the melody, *Fa*, 4. This note will probably cause our reader a moment's hesitation; for, as the sound 4 equally belongs to the *transcadence* and to the *precadence*, he will not know whether he ought to harmonize it with the former or the latter of these two groups. To resolve his doubt, he will observe that in the melody, and in the following bar, occurs the note 6, of which the *transcadence* is the obligatory harmonization; and hence he will infer that the *Fa*, 4, requires accordingly the *precadence* in this fifth bar. It requires it so much the more, as a cadential note, and consequently the *cadence*, immediately follows it, and as it will therefore be placed, in accordance with the Typometer, between the *precadence* and the *transcadence*. Now there is no occasion to hesitate; for the accompaniment of this *Fa*, 4, with the *precadence*, in the second part of time of this fifth bar, gives to the succession of the harmonization the variety which it ought to have. It is certain (and the reader may soon prove it) that the *transcadence* may accompany that *Fa* in an agreeable manner; but it is undoubtedly true that the *precadence* accompanies it in a manner still more pleasing, in consequence of the reasons above explained; and of many more, which it is not yet time to mention.

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* We wish our reader to take particular notice of the Appoggiature which occurs in the third bar. He has just seen that the melody is on the point of resting in the following bar. This Appoggiature prepares this momentary rest. In fact, the *Fa*, F sharp, precadential note of the key of *Sol*, G, changes almost into a cadence, or rather into a semicadence, the precadential chord which succeeds it; and, after the appearance of this *Fa*, F sharp, this precadential chord becomes, by the suppression of the *Fa*, F natural, the complete cadence of *Sol*, G. So, also, the natural order of the precadence of *Do*, C, has been inverted in the same manner as that of the transcadence in the preceding bar; and the *Sol*, G, is there rendered the lowest note, less as the fundamental bass of the precadence of *Do*, C, than as the tonic of the key of *Sol*, G, and fundamental bass of its cadence. The introduction of the leading note or sensible of this key as an Appoggiature, the suppression of the *Fa*, F natural, and the position of the *Sol*, G, in the bass, effect, therefore, a momentary rest on the sound 5, the dominant of the ancient theories—consequently, what they called a close or *cadence on the dominant*; and, finally, what they also called, and what it really is (not less according to us than according to them), a *semicadence*. What conformity of results! Our reader will act wisely in reverting now to the *Elements*, Chap. VI, § 62.

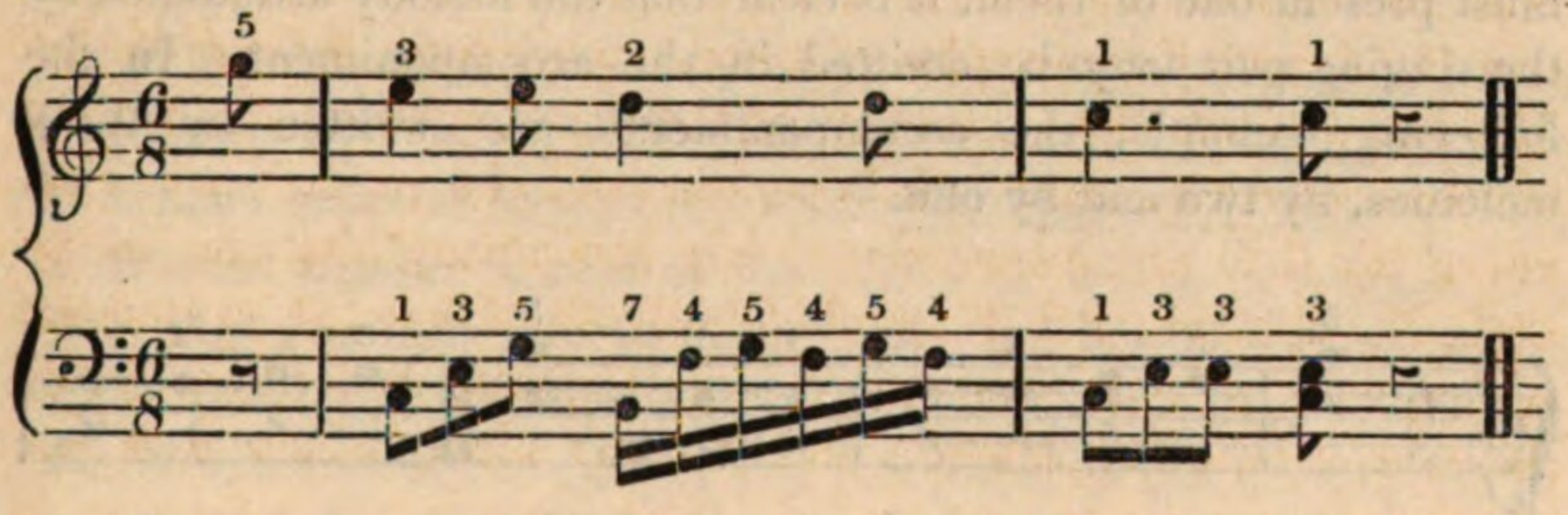
Bar 6th. *Cadence* and *transcadence.*

Bar 7th. *Cadence* and *precadence ;* and, finally,

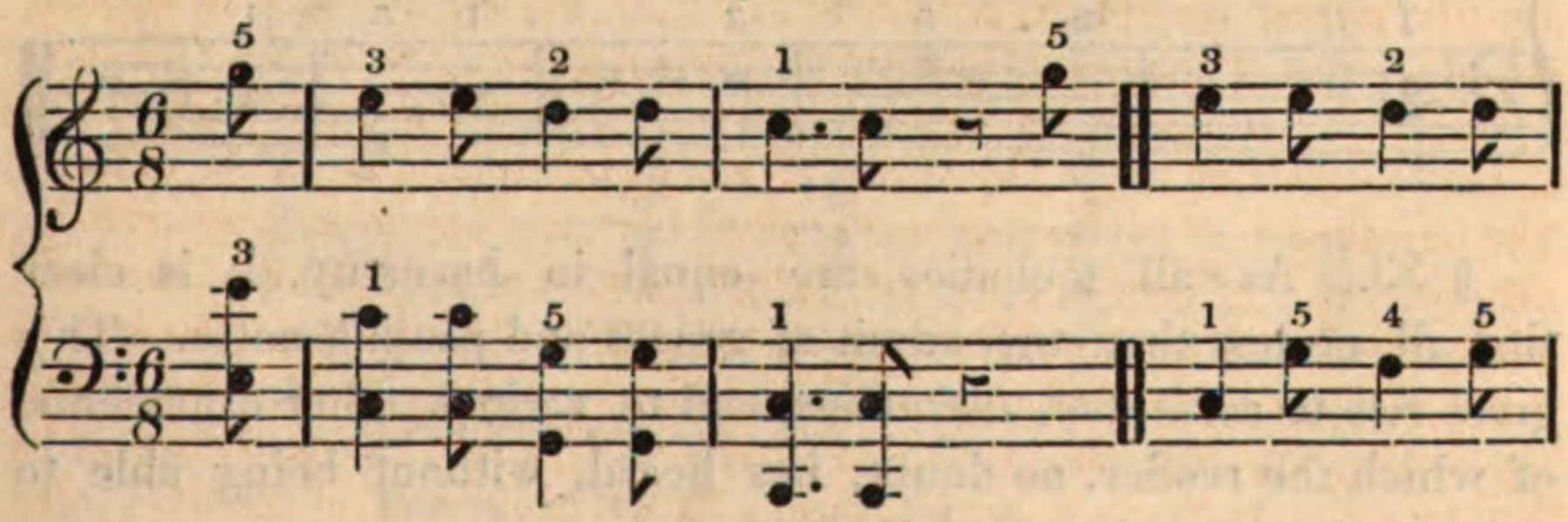
Bar 8th. *Cadence.* The reader is now too well instructed to experience a single instant's hesitation on account of the harmonization of these three bars.

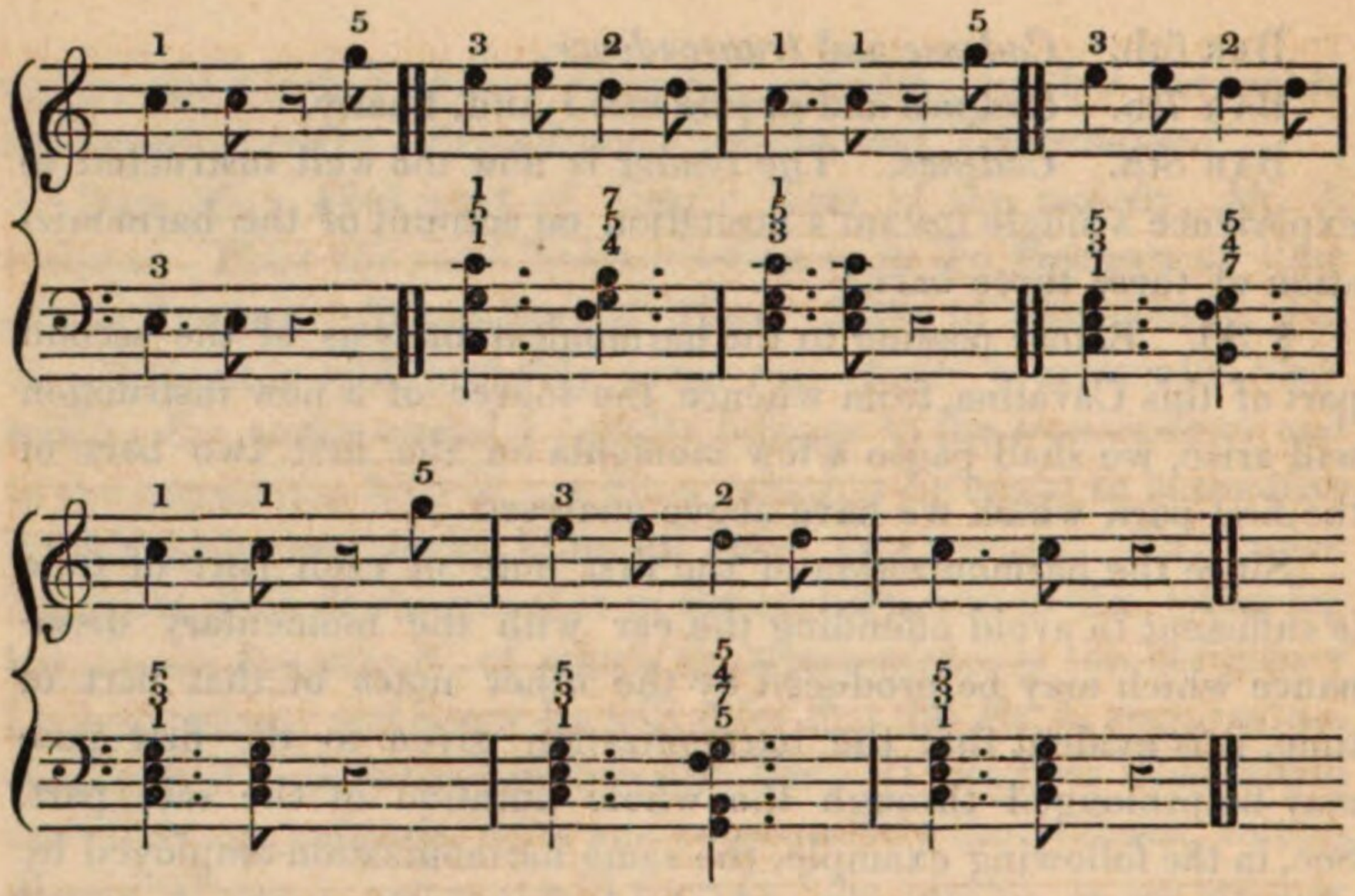
§ 30. Before passing to the harmonical analysis of the second part of this Cavatina, from whence the source of a new instruction will arise, we shall pause a few moments on the first two bars of the first part, which we have above analysed.

Since the harmonization of the first note of each part of time is sufficient to avoid offending the ear with the momentary dissonance which may be produced by the other notes of that part of time, it is evident that the harmonization given to the first note may be prolonged through the whole duration of the said part. See, in the following example, the same harmonization employed by triplets, simple as well as double, in those same bars, the first and the second of the fragment before quoted.

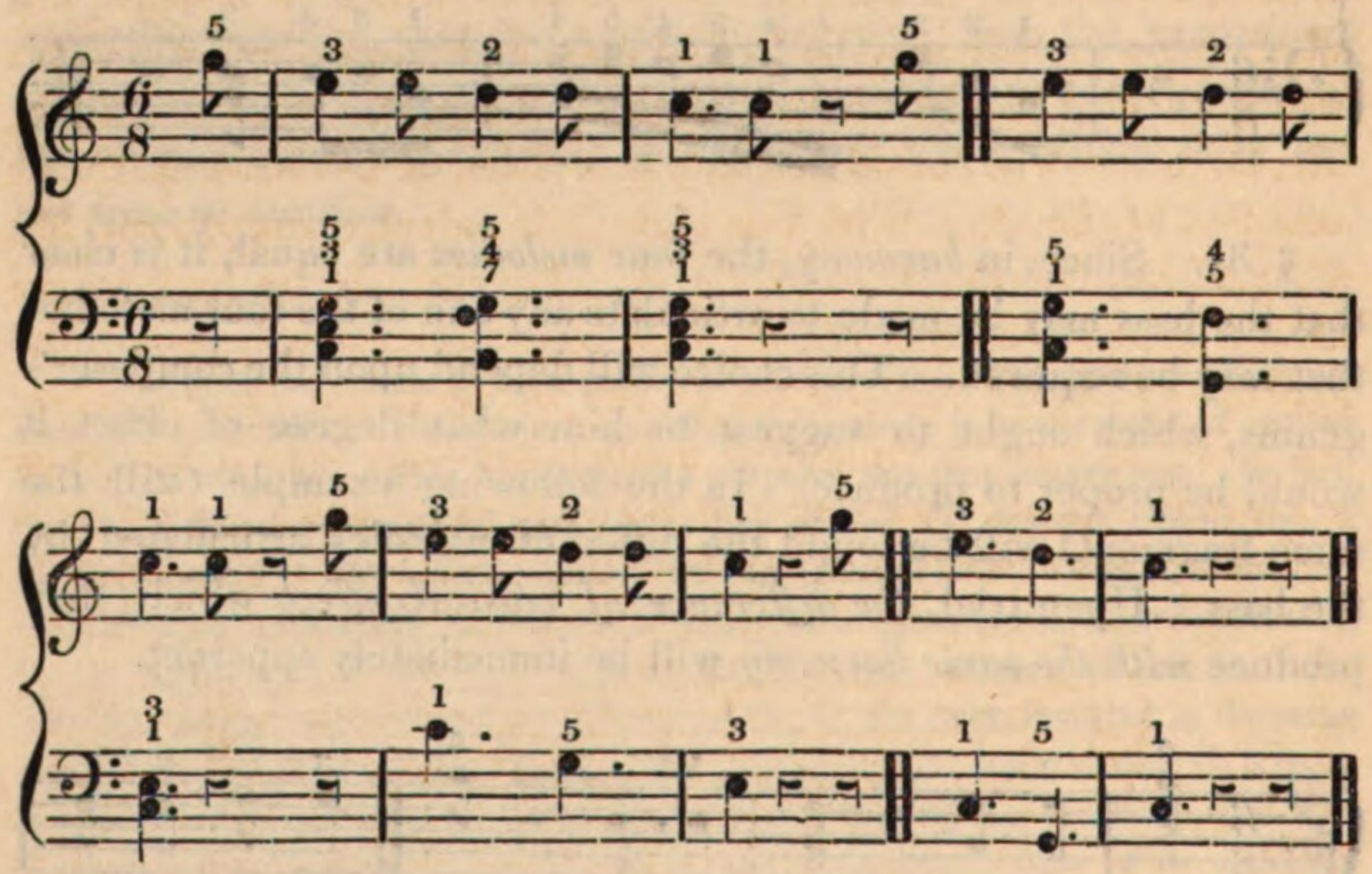


§ 31. Since, in *harmony*, the four *melodies* are equal, it is clear that the bass may be made to articulate any one of the four melodies that may be required. This choice will depend upon the composer's genius, which ought to suggest to him what degree of effect it would be proper to produce. In the following example (still the same fragment) will be found the different melodies articulated by the bass. Upon trial, *the difference of musical effect* which they produce *with the same harmony* will be immediately apparent.



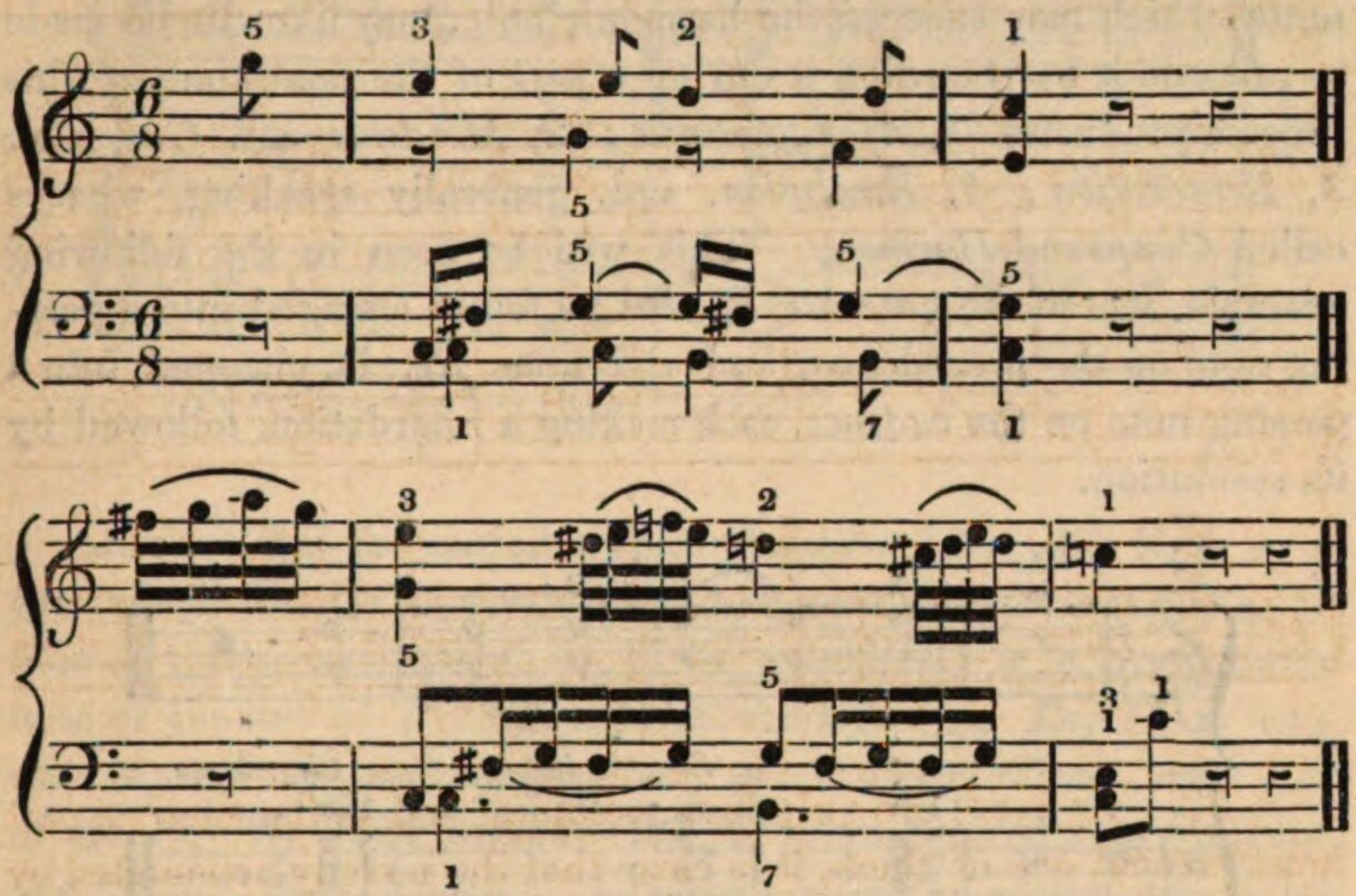


§ 32. As there are only four melodies, and as the singing part must present one of them, it is clear that the melody articulated by the singing part may be omitted in the accompaniment. In the following example, the accompaniments are written by three melodies, by two and by one.

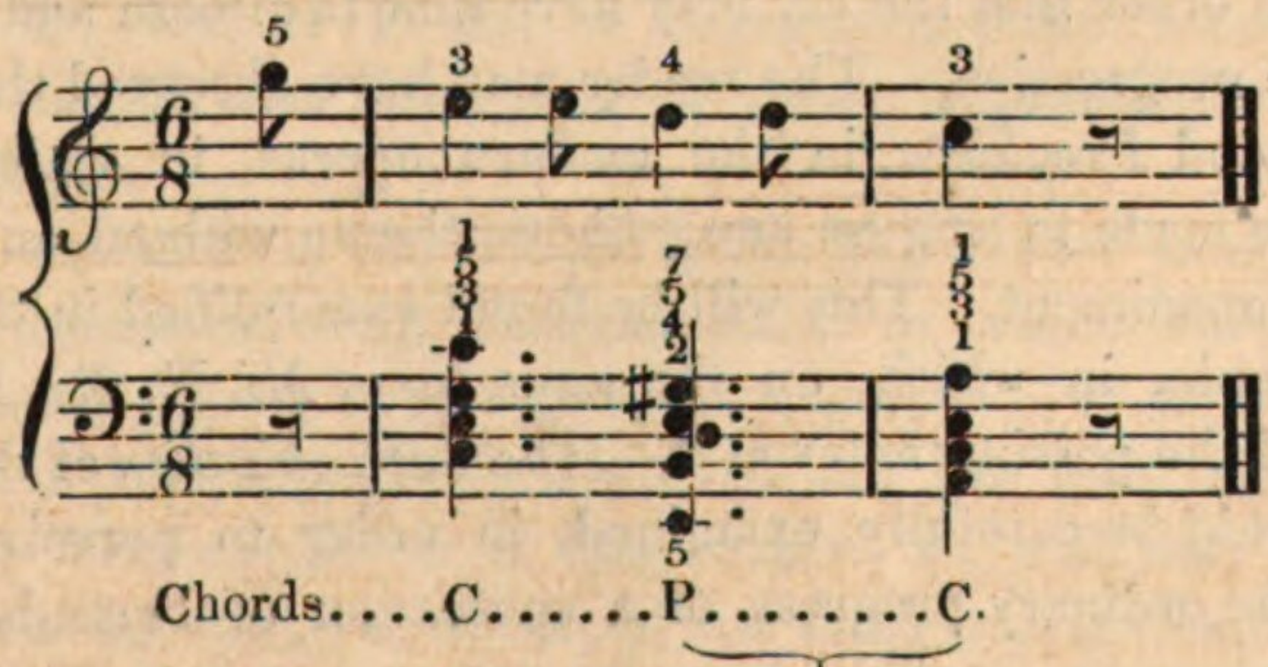


§ 33. As all melodies are equal in harmony, it is clear that all, no less than one, admit of graces and passing notes. This gives rise to *variations*, *imitations*, and to various other ornaments, of which the reader, no doubt, has heard, without being able to

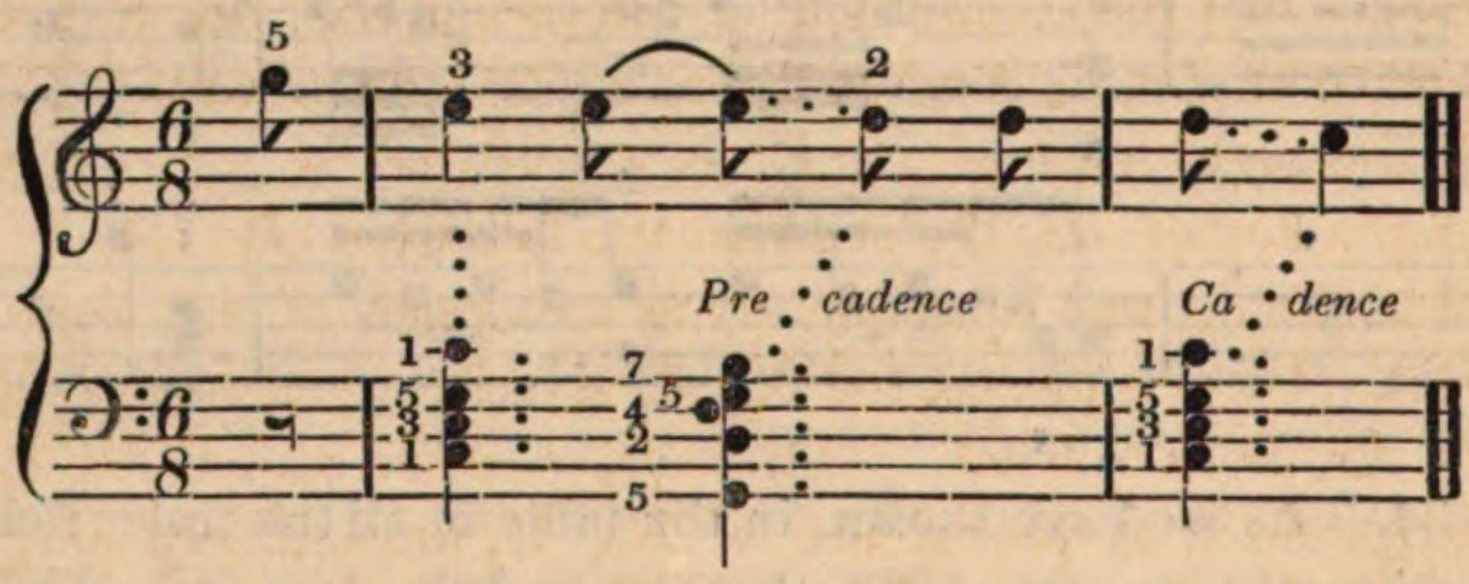
form an idea of what they meant. In the following example we shall give the same air accompanied with graces and passing notes.



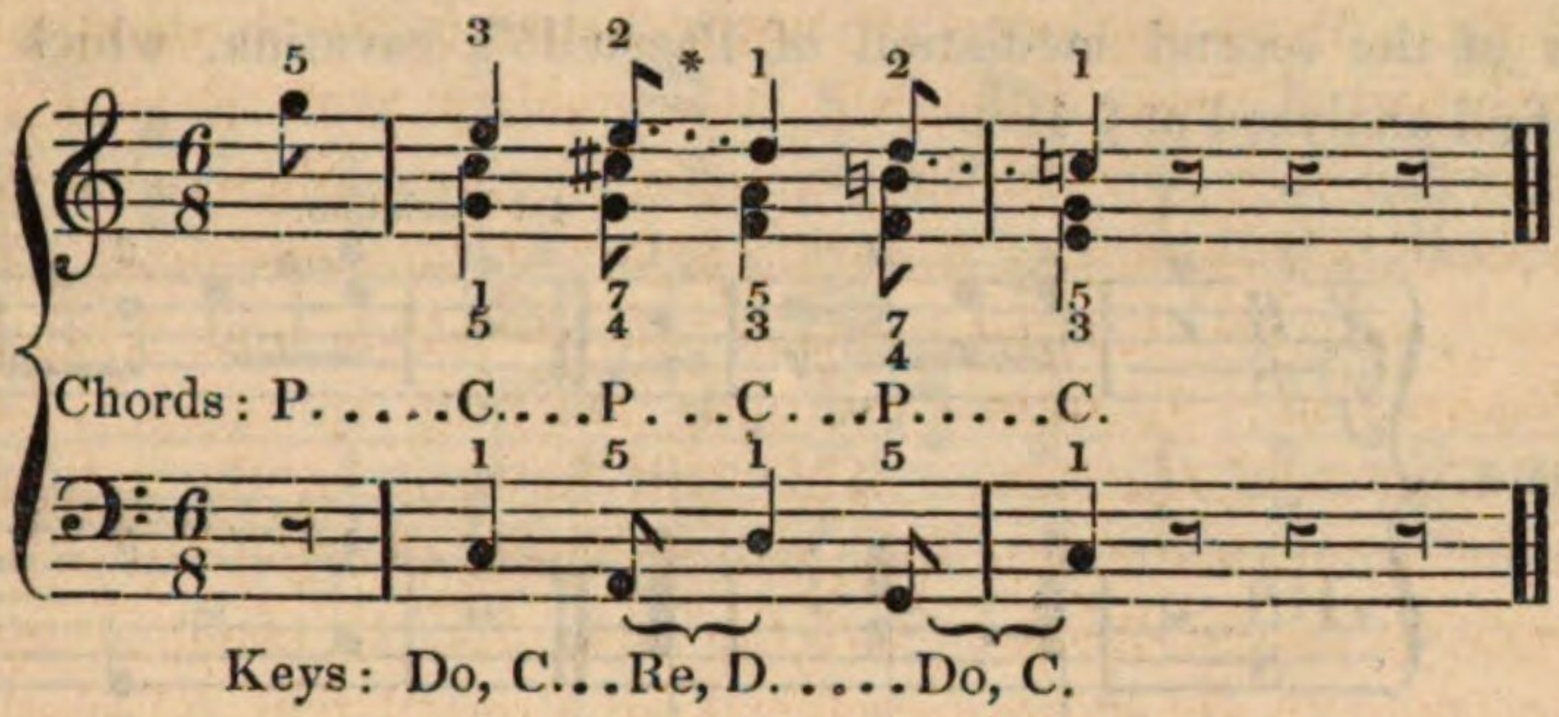
§ 34. As we have shown, in the table of all the scales (entitled Cyphering of Gamuts, p. 95), that one and the same sound belongs to various scales or keys, with this simple distinction, that it bears a different number in each of the scales to which it belongs, it is clear that a melody may be looked upon as a succession of various scales, varying that at which it begins. Thus, this same air, *Mi*, E, *Re*, D, &c. may be considered as a succession of the scale of *Do*, C. and that of *La*, A. With this view, it is only necessary to say *Mi*, E, 3 of *Do*, C—*Re*, D, 4 of *La*, A. Let this air be harmonized after this plan, and the *Mi*, E, will have for accompaniment the cadence of *Do*, C; and the *Re*, D, the precadence of *La*, A. Here we have at once a delightful modulation—one which has been arranged without changing the melody, and which produces a musical effect entirely different from that intended by Paesiello.



§ 35. As passing notes are not reckoned in the harmonization of each part of time of the bar, it is evident that these passing notes, which may succeed the harmonic note, may likewise be made to precede it by retarding it during a part of the same time. This process produces—1, *Appoggiaturas;* 2, *Mordente* and *Grupetto;* 3, *Retardation;* 4, *Resolution,* and, generally speaking, what is called *Compound Harmony.* This will be seen in the following example, where the note *Mi,* E, will be found changed into a passing note on the precadence, and the note *Re,* D, changed into a passing note on the *cadence,* each making a retardation, followed by its resolution.



§ 36. We have shown, in the example of § 34, that every note of a tune may be considered as belonging to various scales or different keys. It is clear, that, when it is wished to regard the passing notes as essential notes of the tune, they may all be harmonized, whatever may be their number. And, as every tune is necessarily and exclusively either a *sequence* or *succession of Cadences* and *Precadences,* it is manifest that the same method must be adopted for the harmonization of the passing notes the moment they are considered as notes of the melody. Hence it follows, that, whenever the passing notes are made by more than one melody, they ought to harmonize together; and that, in these cases, the *rhythm* or *movement* of the tune ought to be slow, that is to say, *adagio,* in order that the ear may have time to discern and relish the harmonic progression. The reader may have observed this in the pieces styled *Preghiera,* in the modern operas, in which several voices are made to sing on one pathetic theme without any orchestral accompaniment. This will be found exemplified in the following example, in which, on the same tune, *Mi,* E, *Re,* D, *Do,* C, are found the passing notes at 4. The *harmonization* of the passing notes should be carefully examined, in order to perceive that it follows the ordinary progress of a succession of Precadences and Cadences.

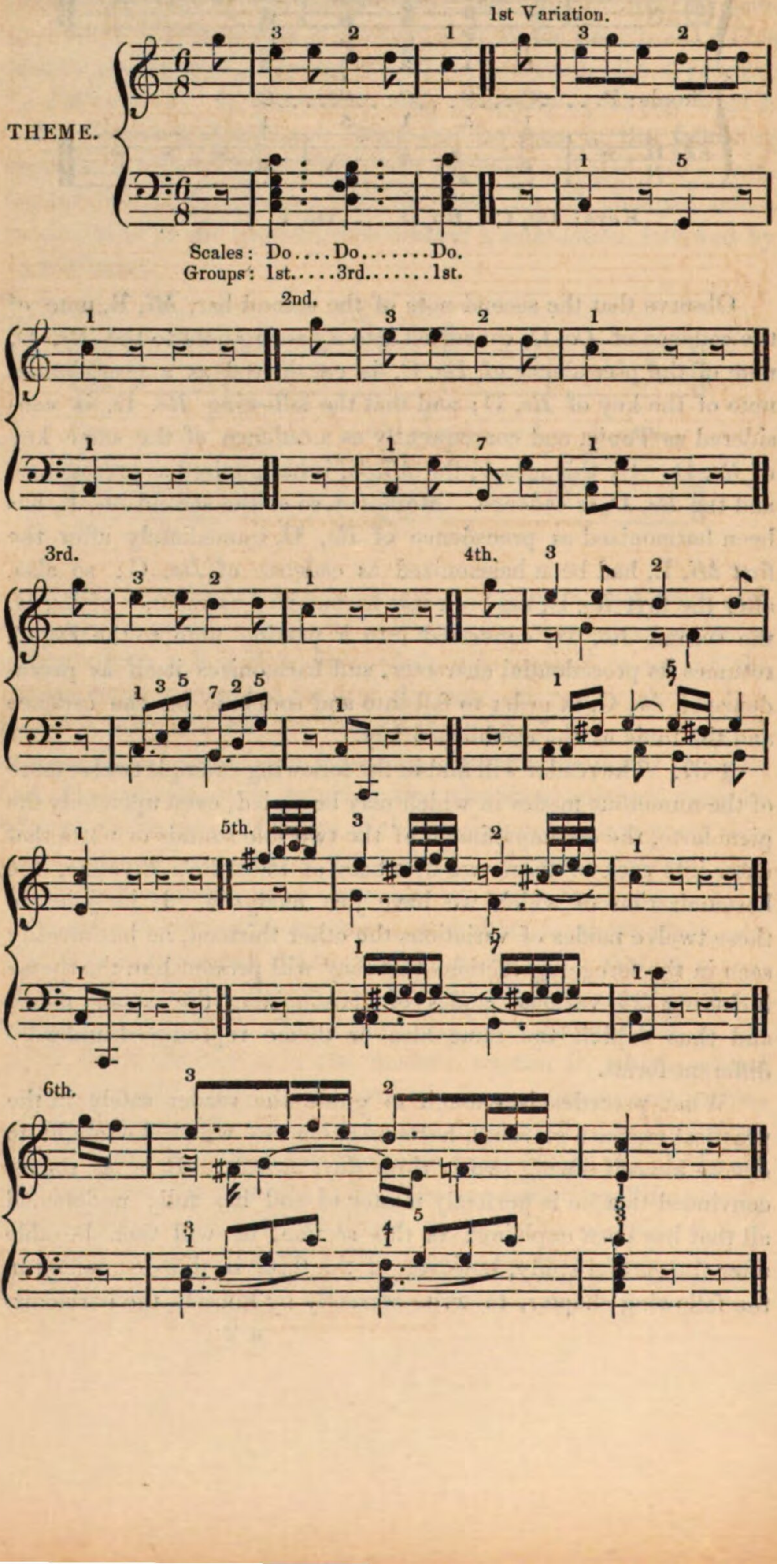


Observe that the second note of the second bar, *Mi*, E, note of the cadence of *Do*, C, converted into a passing note to the *Re*, D, note of the precadence of *Do*, C, is considered as a precadential note of the key of *Re*, D; and that the following *Re*, D, is considered as Tonic, and consequently as a cadence of the same key of *Re*, D. By this means, the *Mi*, E, is harmonized as precadence, and the *Re*, D, as cadence. Moreover, so as the second *Mi*, E, has been harmonized as precadence of *Re*, D, immediately after the first *Mi*, E, had been harmonized as cadence of *Do*, C; so also, after the first *Re*, D, has been just harmonized as cadence of *Re*, D, the second *Re*, D, converted into a passing note to the *Do*, C, resumes its precadential character, and harmonizes itself as precadence of *Do*, C, in order to fall into and conclude on the cadence and the tonic of the established key.

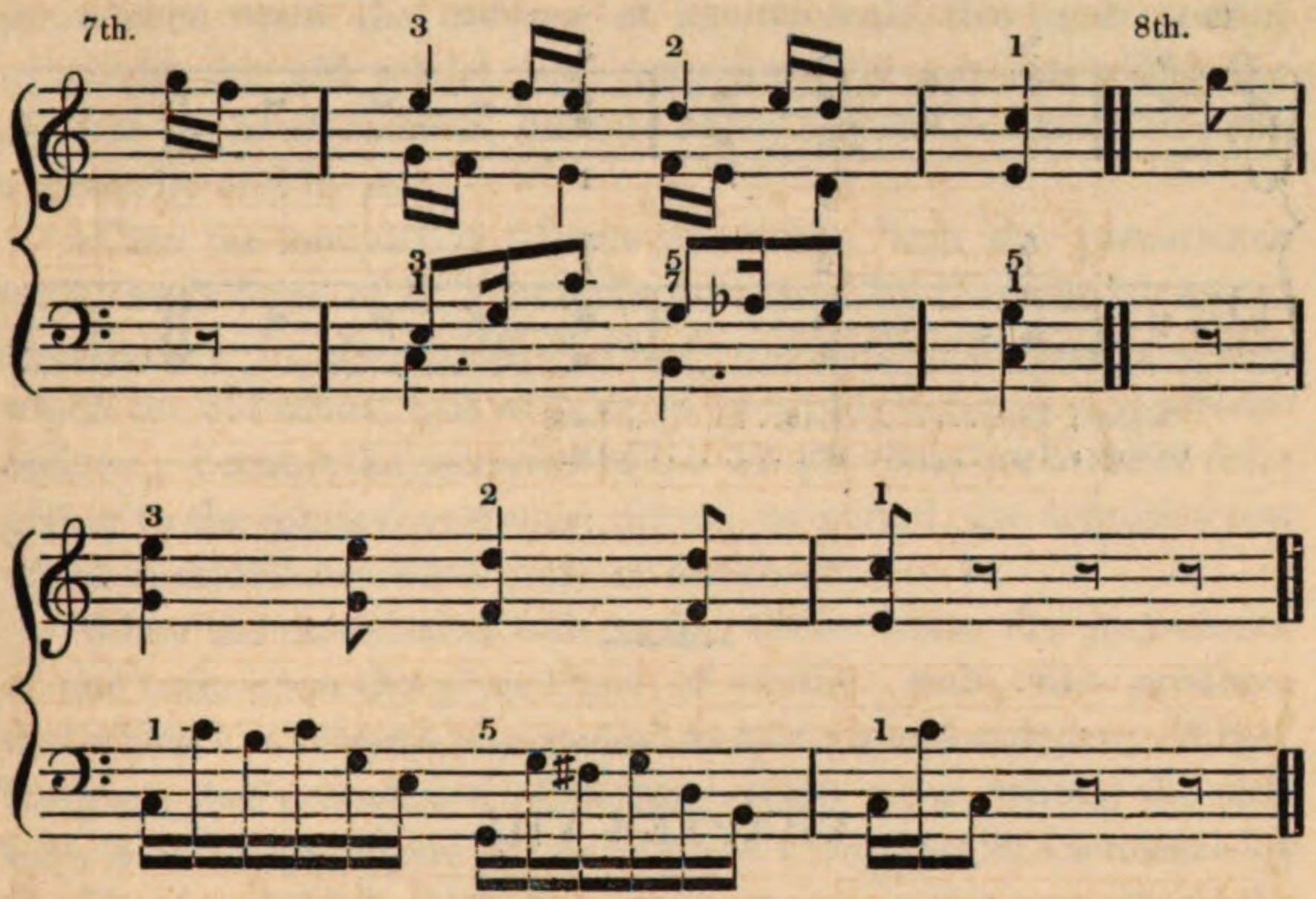
§ 37. The reader will find in the following example twelve more of the numerous modes in which may be varied, even upon only the pianoforte, the accompaniment of the two sole sounds or notes that enter into each of these two first bars of Paesiello's cavatina, the harmonization of which we have just analyzed. If he joins to these twelve modes of variations the other thirteen, he has already seen in the foregoing sections that they will present him the theme including 26 various modes of harmonizing the same notes, and thus exhibit the same idea or theme reproduced under 26 different forms.

What precedes is enough to guide the reader safely in the practical exercise of rough harmonization, to which he ought to devote himself during two or three days at least. If he is sooner convinced that he is perfectly master of and has fully understood all that has been explained in this section, he will then be able after the careful study, however, of the three sections contained in the following chapter, to write correctly by himself the harmoniz-

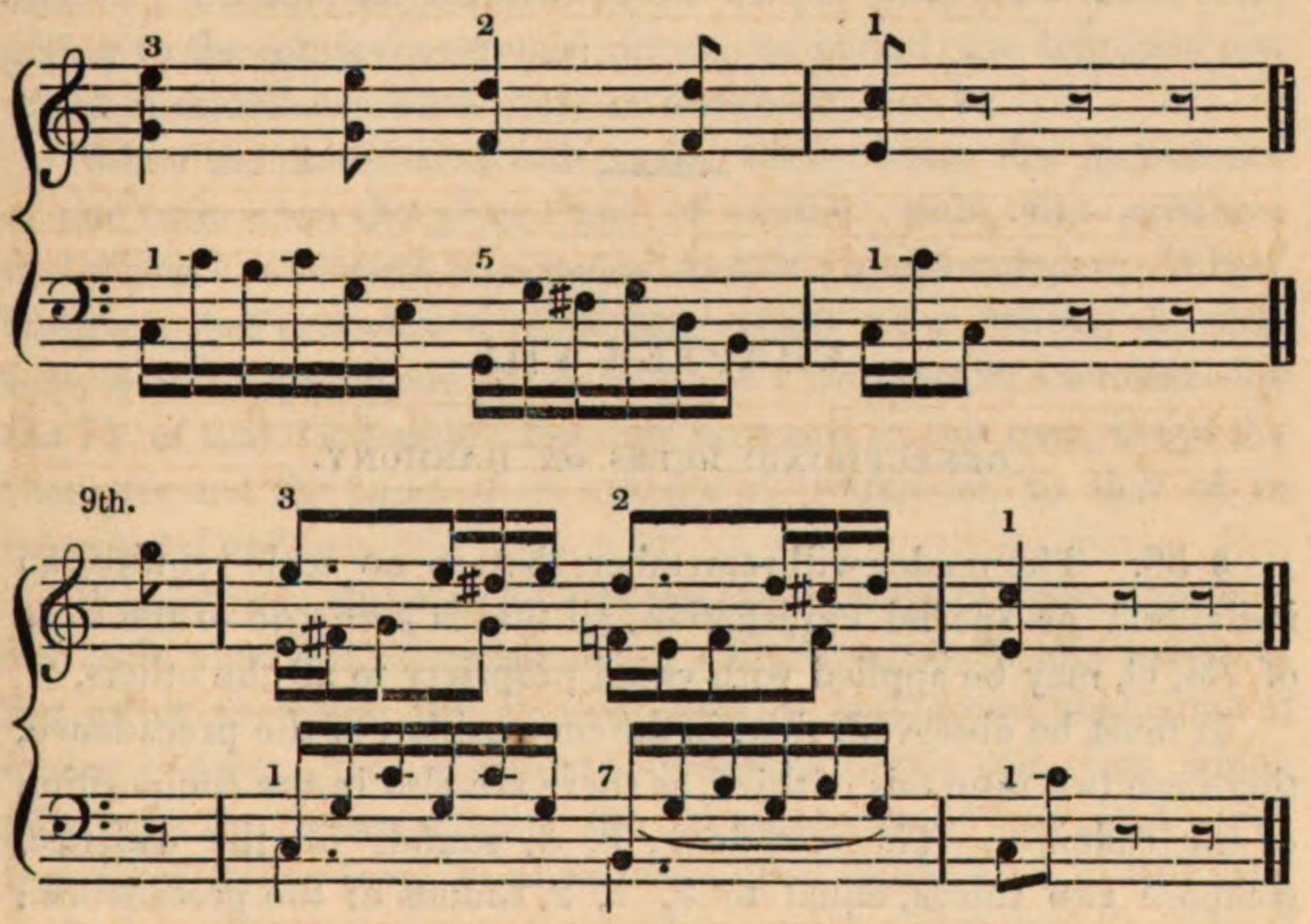
ation of the second mediation of Paesiello's cavatina, which he will find analyzed at § 41.



7th.

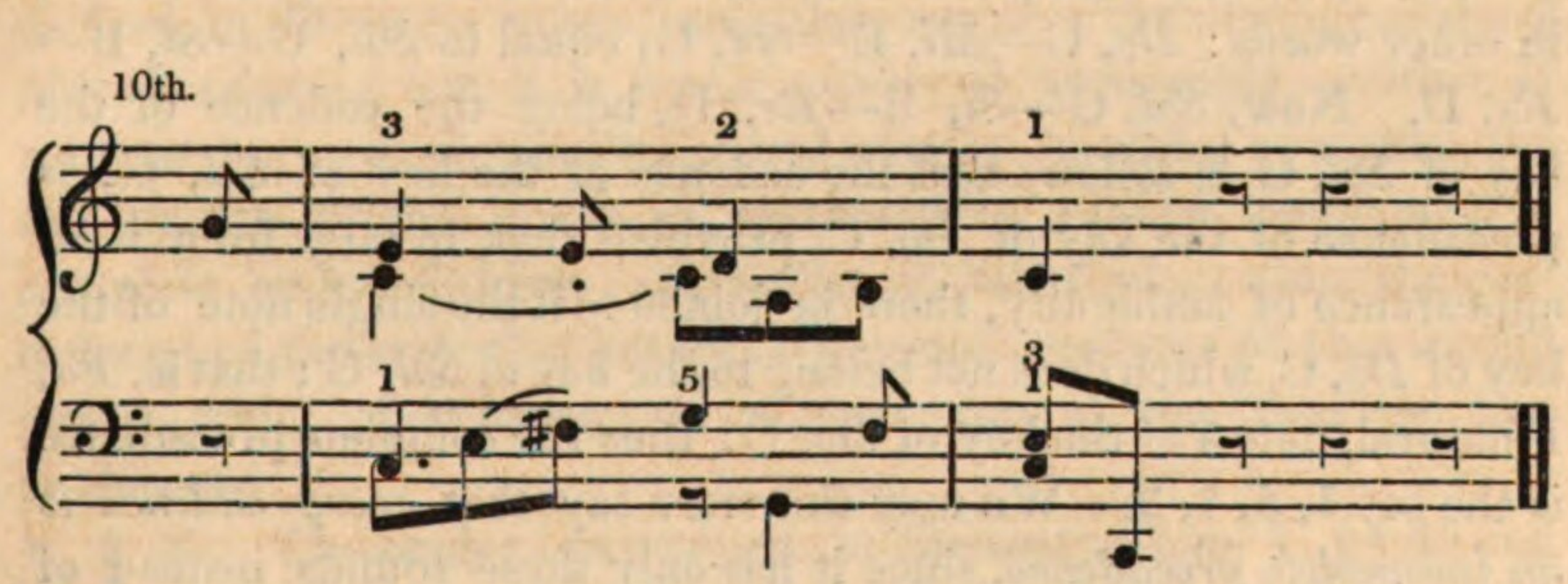


8th.

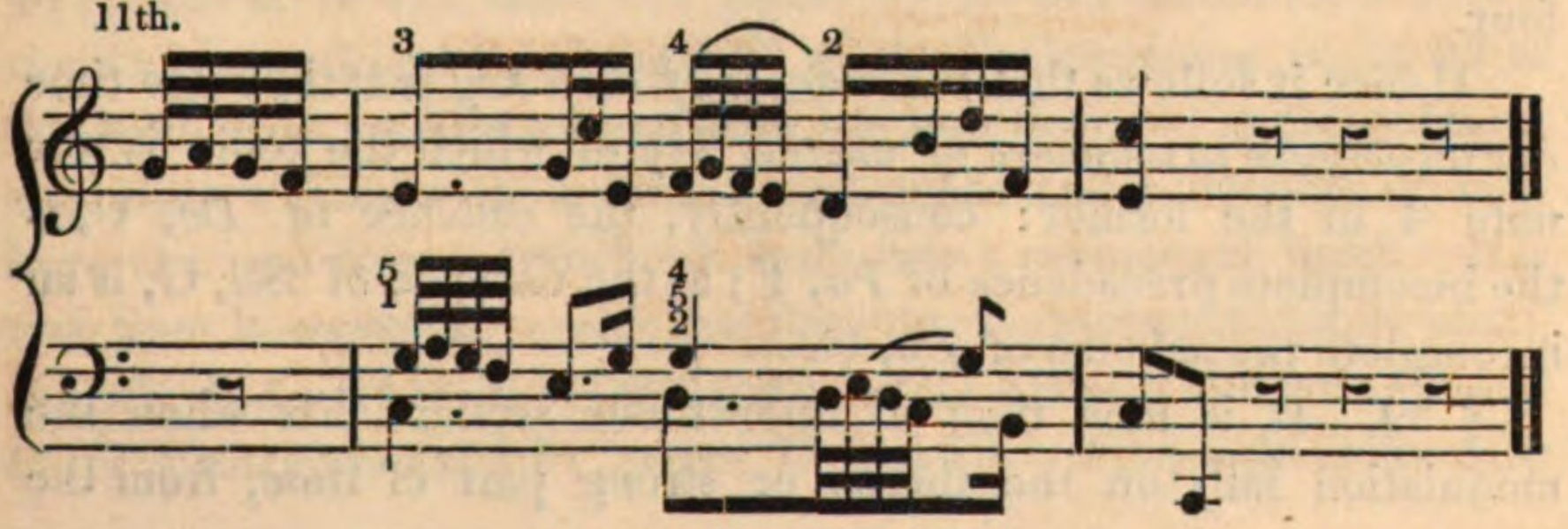


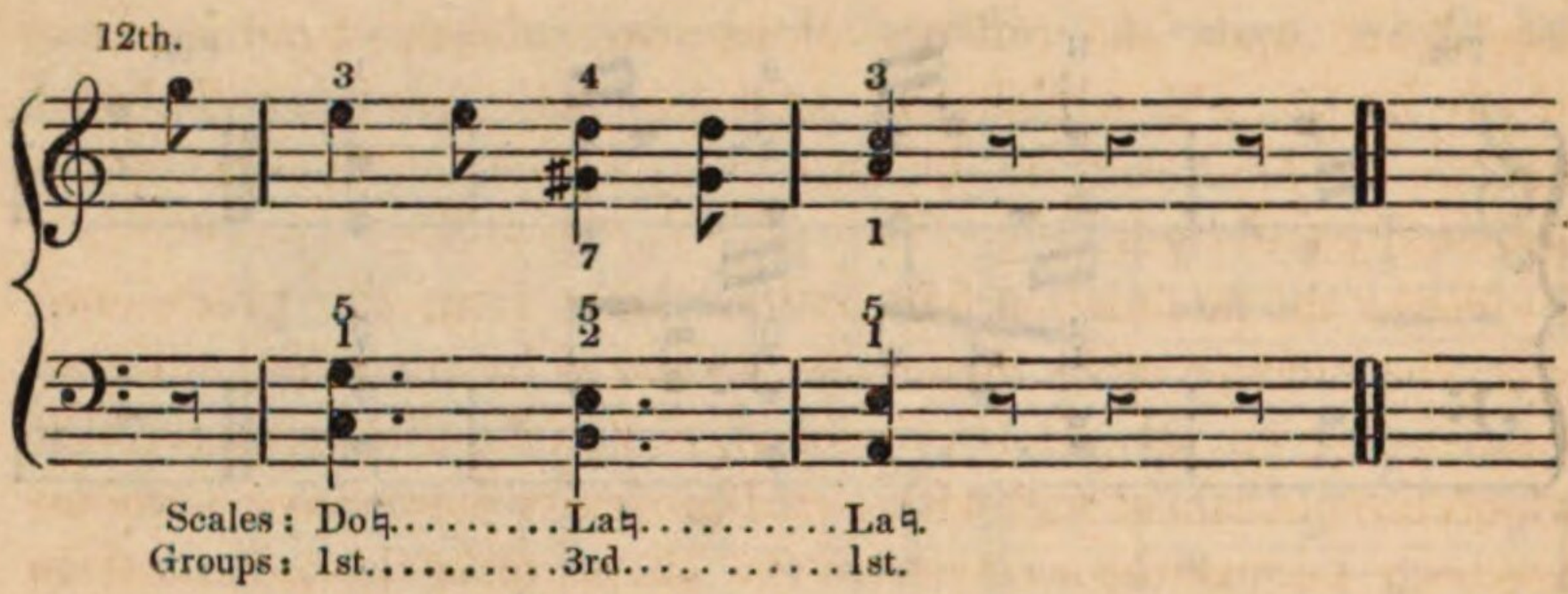
9th.

10th.



11th.





CHAPTER VIII.

GENEUPHONIC RULES ON HARMONY.

§ 38. The reader will remember, that, as no scale requires an individual or special explanation, all that is here said of the scale of *Do*, C, may be applied with equal propriety to all the others.

It must be observed, that, in the composition of the precadence, there are two intervals of third, as there are also in the composition of the cadence. The sounds 1, 3, 5, sounds of the cadence, compose two thirds, equal to 5, 7, 2, sounds of the precadence; in other words: *Do*, C—*Mi*, E—*Sol*, G, equal to *Sol*, G—*Si*, B—*Re*, D. Now, *Sol*, G—*Si*, B—*Re*, D, being the cadence of the key of *Sol*, G, it follows that the cadence of the key of *Sol*, G, is precadence of the key of *Do*, C, provided that, to take from it all appearance of ambiguity, there be joined to it the single note of the key of *Do*, C, which does not belong to the key of *Sol*, G: that is, *Fa*, F natural, note 4 of the key of *Do*, C: thus the complete precadence is the set 4, 5, 7, 2. We may therefore say that *every cadence is an incomplete precadence*, since it has only three sounds instead of four.

Hence it follows that *the cadence of each key is* at the same time *the incomplete precadence of another key* of which the tonic is the note 4 of the former: consequently, the cadence of *Do*, C, is the incomplete precadence of *Fa*, F; as the cadence of *Sol*, G, is an incomplete precadence of *Do*, C.

§ 39. It is now time to inform our reader that when the modulation falls on the thesis, or strong part of time, from the

precadence upon the cadence of its own scale, this produces that which in the old school, and very properly too, was called the *absolute* or *final cadence*, because every musical composition must necessarily end by it.

When the modulation falls on the thesis from the precadence upon the cadence of its own scale, increased by the note 7 lowered a semitone; viz. *Do*, 1, *Mi*, 3, *Sol*, 5, *Si* flat, 7; this produces that which the old school had with equal propriety denominated *avoided cadence;* because the accession of the 7♭ prevents the cadence from giving to the musical sentence, phrase, or period, the definitive rest which it establishes when pure or unaltered.

When the modulation falls on the thesis from the precadence of one scale upon the precadence of another scale, this produces that which has hitherto been named an interrupted cadence. When, however, that precadence of another scale, upon which the first falls, is at the same time the cadence of a third scale, increased by the 7♭ of that third scale; then the cadence, in this case, keeps the character and the name of an *avoided* in preference to that of an *interrupted cadence.*

When the modulation falls on the thesis, from the precadence of one scale upon the pure cadence of a different scale, this produces the effect to which the ancient theories had given the name of *broken cadence.* The apparent absolute cadence, viz. that which falls from the cadence upon the transcadence of one same scale, instead of falling from its precadence upon its cadence, is still used as final in lithurgic music, and then receives the denomination of *plagal cadence;* but it is never employed as absolute, neither in profane nor even in modern sacred music; because, in reality, the fall on the second group or transcadence cannot accomplish a complete and definitive rest, unless it takes place from the precadence of the scale that has for its key-note the tonic of that second group, which then becomes a cadence: but in that case the key is changed.

§ 40. The reader has perused, in *Elements*, Chap. V. § § 45 and 46 (pages 40 to 44), the rules given by the old school for modulations and transitions; and the § 72 of the Prolegomena, pages 87 to 90, have been for him a glimpse at the new doctrine in this matter; a glimpse which, with a little intelligence and reflection, he may have changed from a transitory flash into a permanent light. It is now time, however, to render that important subject completely plain, smooth, and easy to him, by placing before his eyes the rule alluded to in Prolegomena, § 51, pages 78 and 79. This rule is the only

PROCESS OF NATURE,

And sole Rule of the Art for Modulation and Transition.

The prolongation of one of the sounds, or of two, or of the three sounds of the cadence of a key, operates one, or two, or three conversions of those sounds into as many sounds of the precadence of another key. Join in this very act to the converted sounds the other sounds of that precadence, and the *modulation* is made. Immediately after that precadence, pronounce its cadence, and the *transition* or change of key is accomplished: for instance, would you modulate from the key of *Do*, C natural minor, into that of *Si* flat, B flat major, prolong the *Do*, C, 1, and the *Mi* flat, E flat, 3, which shall be converted into *Do*, C, 2, and *Mi* flat, E flat, 4; to these two sounds add the other two, *Fa*, F, 5, and *La*, A, 7, in order to complete the precadence of the key of *Si* flat, B flat, and your modulation is effected. After this precadence, utter the cadence of that key of *Si* flat, B flat: *Si* flat 1; *Re* 3, *Fa* 5; *Si* flat octave; B flat, D, F, B flat; and the change of key or transition is complete and definitive.

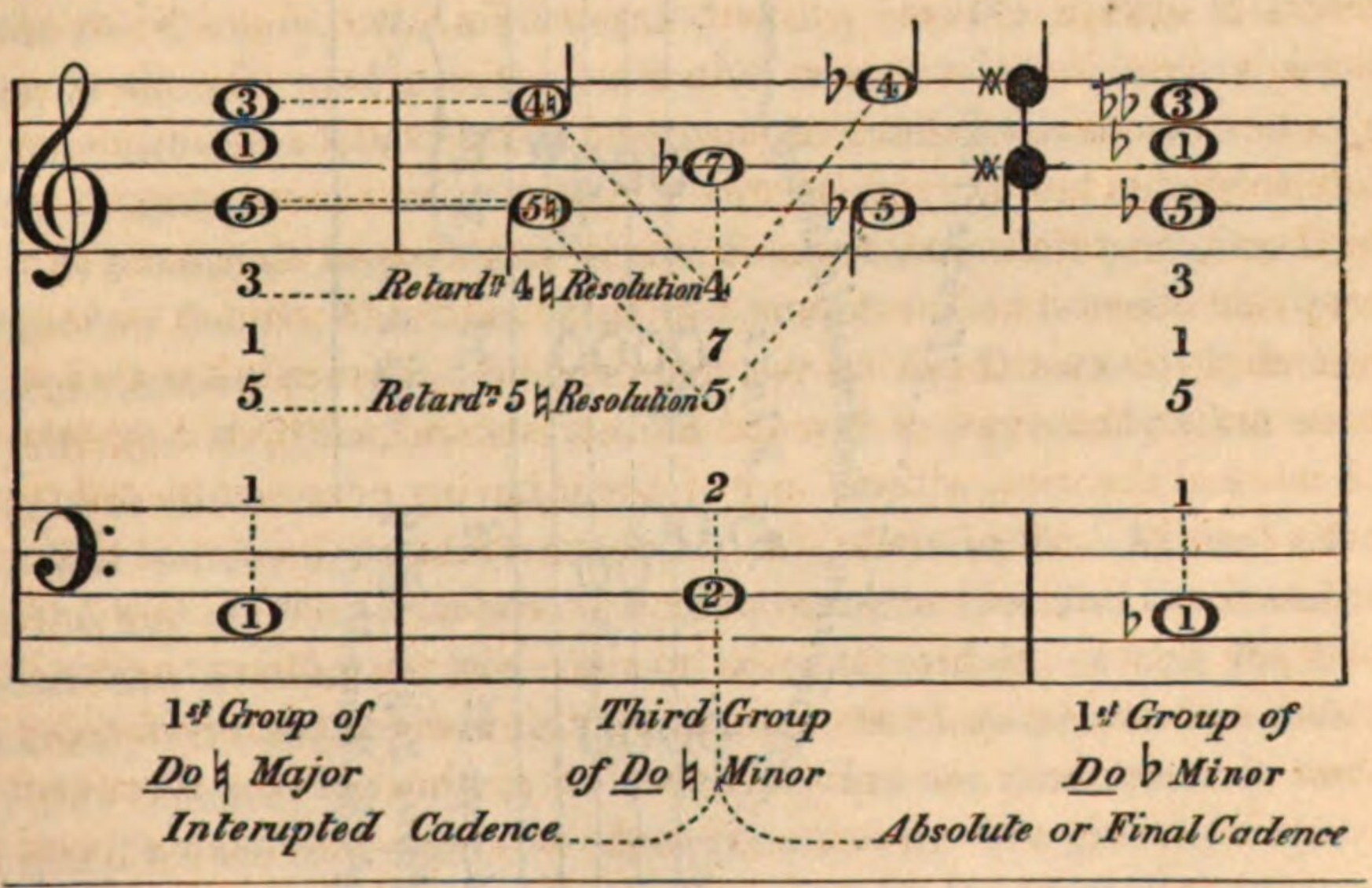
All the time you should have delayed this operation for the key *Si* flat, B flat, you have employed it to do the same thing for other keys, which you were not seeking after. This proves that modulation is always effected without any intermediate chord between the key you leave, and that into which you enter. As often as you have made, or believe to have made, modulations by means of intermediate chords (and whatever be the dissonances introduced in them), so often you have followed and obeyed that same and only rule above stated; so often you have modulated without saying, intending, or even knowing you had done so. That rule has always been under the eyes of learned harmonists and celebrated writers of musical theories, without any of them having ever manifested to have seen it. All of them, in fact, have acknowledged that there are series, marches, or progressions of cadences having no link between them. Nature answers to them that they labour under a positive error; for in such marches of cadences (or perfect chords) there is, necessarily, an equal number of precadences (or chords of seventh) which are understood; and, although not having been pronounced, have not been less present to, and influential on, the operation which they have themselves determined and regulated. We request our reader to apply the above rule to any example

that will fall under his hand; and afterwards to endeavour to make any cadence succeed to another cadence not having with it that precadential connexion or link just alluded to; and he will see whether that will be possible; in other words, whether his ear will tolerate it. After this experiment, we have no doubt that our reader's astonishment at the whole contents of this section will be raised to the utmost height. In the meanwhile, let him attentively examine the two following examples, the first of which is extracted from the celebrated Catel's *Treatise on Harmony, Counterpoint, and Musical Composition*, page 64.

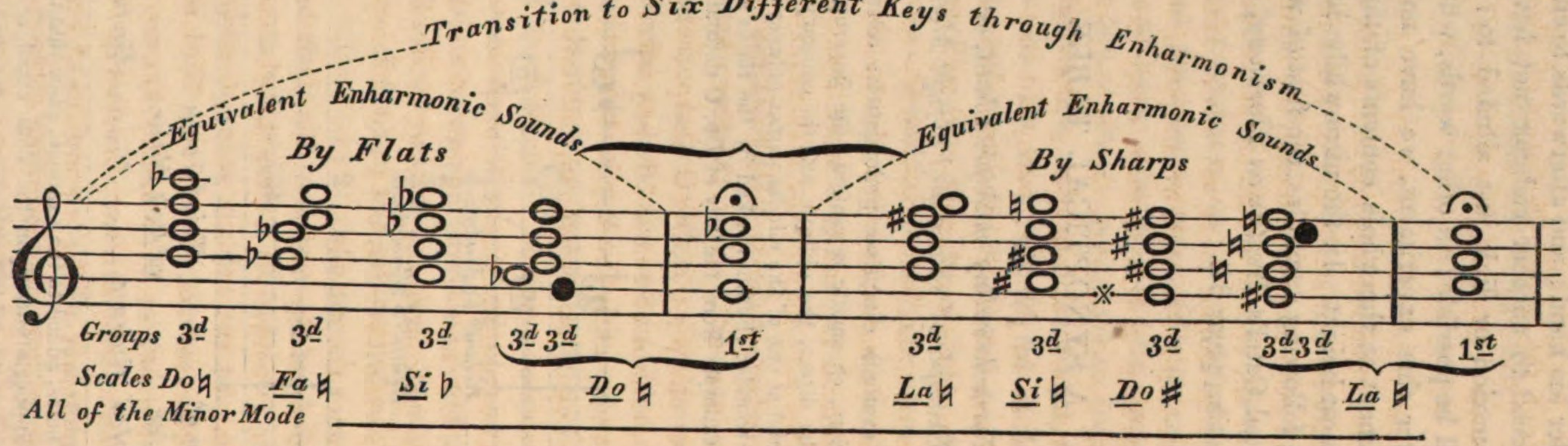
A SYNOPTICAL TABLE

Of the radical Formula ruling multiple Chant, or Harmony applied to an Example of strong and abrupt Modulation.

The following example comprises prolongation; retardation; preparation; enharmonic resolution; chromatic resolution; the interrupted and the absolute, or final cadence; the direct, the oblique, and the contrary motion; the melodic bass at the grave, and at one of the middle parts; octaves used as identical with their denominative sounds; rhythm marked by the thesis and the arsis. Modulation goes in this example from the key of Do, C natural major, to that of Do, C flat minor.



W M These two notes, added to the example, show that the sounds 4 and 7 can be prolonged as appoggiaturas upon the final chord, as well according to the ancient theories as according to the Geneuphonic doctrine.


Transition to Six Different Keys through Enharmonism
Equivalent Enharmonic Sounds
By Flats
Equivalent Enharmonic Sounds
By Sharps
Groups 3d 3d 3d 3d 3d 1st 3d 3d 3d 3d 3d 1st
Scales Do♮ Fa♮ Si♭ Do♮ La♮ Si♮ Do♯ La♮
All of the Minor Mode

Analysis of the Second Mediation of Paesiello's Cavatina (continued from § 29, p. 127*).*

§ 41. The reader has been enabled, by the perusal of the observations and rules contained in § 24, in the following ones, Chap. VII, and principally by the study of the three foregoing sections, to understand, and even compose himself, the harmonization of the second part, i. e. of the second mediation of the beautiful theme of Paësiello. Before he comes to it, we advise him not to proceed further until he has amused himself by composing the harmonization of the eight first bars of this tune in every way that has been hitherto laid down.

Let us now return to the cavatina. The reader has seen that there is no accident in the first part, and that accordingly the melody does not leave the scale of the key: but he will find several alterative signs in this second part, and will acquire, from the following analysis of their harmonization, the practical knowlege enabling him to pass from one key to another, a knowledge which has hitherto been reduced for him to a mere theoretical information.

Bar ninth of the air; note of the melody, *Do*, C sharp.

We know already (see Chap. VII, § 25) that every sign which raises a note produces a 7. Now, the sharp has raised the *Do*, C natural, to *Do*, C sharp; the *Do*, C sharp, therefore, is sound 7. But *Do*, C sharp, cannot be sound 7 in any other scale than that of *Re*, D natural, consequently the key is changed; that is to say, we have quitted the key of *Do*, C *natural*, and have entered the key of *Re*, D *natural*.

We must not forget that the note 7 appertains to the precadence; therefore the *Do*, C♯, note 7 of the key of *Re*, D natural, has for harmonization the precadence of the key of *Re*, D natural, 2, 4, 5, 7, *Mi*, E—*Sol*, G—*La*, A—*Do*, C♯; and this is precisely what we ought to write under the melody.

Bar tenth; note of the melody, *Re*, D natural.—As we are in the key of *Re*, D natural, it is clear that the note *Re*, D natural, bears the number 1; the harmonization, therefore, of this *Re*, D natural, is the cadence of *Re*, D natural. With respect to the *mode* of this cadence, the author of the melody has not determined it for us; and we are conseqently at liberty to select it. We give the major first, and then the minor. The minor gives us two sounds to spare, which we shall employ in the following measure; they are *Re*, D natural, and *Fa*, F natural, which, being notes 1 and 3 of the key

of *Re*, D natural minor, will be changed into notes 2 and 4 of the key of *Do*, C natural, upon which we are now going to enter again.

Bar 11th of the same air; note of the melody, *Si*, B natural.—This natural, which raises the *Si*, B flat, of the minor scale of *Re*, D natural, is evidently (by the general rule) sound 7. Now, the *Si*, B natural, is not sound 7 in any scale, unless it be in that of *Do*, C *natural*. Then we are in it once more; and, as the sound 7 belongs to the precadence, it is the precadence of *Do*, C natural, that we give it for harmonization.

Bar 12th; note of the melody, *Do*, C natural.—As we are again in the key of *Do*, C natural, of which we have just uttered the precadence, and as we ourselves find in the melody a *Do*, C natural, note 1, it is clear that we ought to give as harmonization for this Do, C 1, its cadence *Do*, C—*Mi*, E—*Sol*, G—*Do*, C: 1, 3, 5, 1.

Bar 13th; note of the melody, *Fa*, F sharp.—The sharp raising the *Fa*, F, makes it note 7. The *Fa*, F sharp, cannot be note 7, except in the key of *Sol*, G natural. The note 7 appertains to the precadence; and therefore the harmonization of *Fa*, F sharp, is the *precadence* of *Sol*, G natural.

Bar 14th of the melody: *Sol*, G natural.—This *Sol*, G, is note 1. Its harmonization is consequently the cadence *Sol*, G—*Si*, B—*Re*, D—*Sol*, G = 1—3—5—1.

Bar 15th of the melody: *Fa*, F natural.—Since the natural of the *Fa*, F sharp, has made it descend a semitone, it is clear that *Fa*, F natural, is note 4 of a key. The *Fa*, F natural, is note 4 only in the key of *Do*, C natural; and as we never enter into a key, except by its precadence, this sound is here clearly precadential. We shall harmonize it, therefore, with the precadence of the key of *Do*, C natural.

To the *sound* 4 of this same 15th bar succeeds the sound *Mi*, E, 3, which, being of the cadence, is harmonized by it, as may be seen in the example now under analysis.

Bar 16th of the melody: *Re*, D natural, 2.—The note 2, being precadential, is harmonized by the precadence.

§ 42. After these eight bars, we have given the harmonization of the 17th, 18th, 19th, and 20th bars, the last of the air of *Paesiello*. The reader must see that these bars are an exact repetition of the bars 5th, 6th, 7th, and 8th, which we advised him to harmonize himself. Upon comparing his work with ours, we feel confident that, finding a perfect conformity between them, he will be thoroughly convinced of, and completely satisfied with, our

harmonic rudiments, as capable of shortly raising him to a par with the most correct harmonists.

The reader is requested not to proceed farther until he has made himself master of this part of the art. We are convinced that, to obtain the conviction for which we demanded a trial only of three days, he has not employed perhaps more than one. Let that be as it may, he should continue his exercises of composing accompaniments to other airs, with the melodies of which he is familiar, and which, including more modulations, are consequently more complicated than that of *Paesiello*. He should, moreover, remember that his exertion is still confined to *harmonization*.

We sincerely hope that the rudiments of harmony contained in these eight chapters will greatly encourage our reader, and raise his curiosity and emulation, whilst they will deserve the approval of his master and other learned theorists.

To conclude in a pleasing manner the observations and examples which Paësiello's cavatina suggested to us in this exposition of the first branch of the art of musical composition, we inform our reader that, to obtain the desired end, COUNTERPOINT has invented and established several rules relating to the motion and direction of the four simultaneous voices, or parts, which produce complete musical harmony. When we say *the four parts*, we clearly manifest to the reader a truth which will delight him much, and will, were he even acquainted with it, make his mind easy; namely, that however considerable may be the number of the various instruments and singers of which an orchestra consists, with its choruses and all its accompaniments, those instruments and voices do not perform nor sing, amongst them all, one single note which is not one of the four contained in the *Cadence*, *Transcadence*, and *Precadence*, of the Typometer, except by multiplying their octaves, according to the extent, faculty, or register of the Bass, Tenor, Counter-tenor, and Soprano: from whence our reader will infer, that, if we teach him in a fortnight how to manage and conduct the four voices in parts, we have not deceived him by the promise of enabling him to compose for a full score, so he be aware of the extent and power of the voices and instruments.

ON COUNTERPOINT.

CHAPTER IX.

§ 43. HARMONICAL matter, being in its nature elementary, and consequently very simple, is monotonous and tiresome when employed without mixture, without modifications and some interruptions, which may cause the ear to wish for its return. For this reason, and to this end, was invented the art of *Counterpoint*, which works, polishes, measures, cuts and disposes the uncouth harmonical matter, so as to make it represent the power of human industry, put into practice upon that rough production of nature.

It is thus defined: "Counterpoint is the art of leading the "distinct and simultaneous melody of several voices or instruments "towards the harmonical *cadence* or *precadence*, transferred to "various degrees of acuteness or gravity; namely, to various keys."

This definition, new as this whole theory, reveals already to the reader a strange truth; *i. e.* that there are in nature only two chords or positions; namely, the *precadence* and the *cadence;* and that he consequently becomes free from the endless molestation of studying the absurd doctrines of the *unaltered*, *imperfect*, and *superfluous* intervals; of the *direct*, *inverted*, *anomalous*, and *compound* chords; and, in one word, of all that which, till this day, has been as indefinitely as insufficiently written and taught upon that natural magic called "The Art of *Counterpoint*," for establishing, explaining, attacking, or defending the numberless rules of which it consists.

§ 44. Here, as well as in § 28, Chap. VII, page 122, the reader will naturally think of taxing us with contradiction; since, in the *Typometer*, pages 110 and 111, we suppose and present three chords, and not two; to which, at this moment, it will be sufficient for us to answer, that the number of three chords in the *Typometer* is relative only to the constitution or fixation of the key, but not in any way to harmonical matter. The reader, in fact, can observe, that the *transcadence* is the same chord as the *cadence* raised four degrees, *i. e.* to the note *Fa*, 4; so that that *transcadence* of the

key of *Do* is the *cadence* of the key of *Fa*, as it is shown in the following example :

Do 1	.....	Do 5
La 6	.....	La 3
Fa 4	.....	Fa 1
⌣		⌣
⋮		⋮
Transcadence of Do.		Cadence of Fa.

That example shows that the second group (or *transcadence*) of a key, is the first group (or *cadence*) of another key of four degrees higher, as here the *transcadence* of the key of *Do* natural is the *cadence* of the key of *Fa* natural, which is four degrees higher than that of *Do*. We see that the notes are the same, but the numbers only are changed. The same example proves also that the *cadence* of a key is, by the same reason, the incomplete *precadence* of the key which is four degrees higher; as, for instance, the *cadence* of *Do* is the incomplete *precadence* of *Fa*. And lastly, that the *precadence* of a key contains, besides the fourth of that key, the *cadence* of that which is four degrees lower, or five degrees higher, as *Sol* natural is with relation to *Do* natural.

Were we to reduce these observations into rules, we should come to the three general and following axioms:

I. The *transcadence* of every TONIC is the *cadence* of its fourth; and, reciprocally, the *cadence* of every TONIC is the *transcadence* of its fifth.

II. The *cadence* of every TONIC is the incomplete *precadence* of its fourth (the note 4 being wanting).

From which it follows, that, considering every tonic and its fourth as two separated tonics, of the three groups of each, two are common to both of them.

III. The *precadence* of every TONIC is the *cadence* of its fifth, by means of the suppression of the sound 4.

To these *three* axioms, which we invite the reader to impress deeply on his memory, may be added the six secondary precepts hereafter stated, as not less useful, though grounded only on the syllabic identity of the notes; leaving, therefore, to the reader himself the care of placing the proper accidents according to the Typometric Table; viz. according to the signature of the keys to which he will apply the following rules.

"In the same manner as the *cadence* of every *tonic* is the imperfect *precadence* of its FOURTH," thus:

IV. The *cadence* of every TONIC is the imperfect *precadence* of its *second* (the note 5 being wanting).

V. The *precadence* of every TONIC is the imperfect *precadence* of its *third;* the note 5 of the former being in plus; the 4 of the latter, in minus.

VI. The *cadence* of every TONIC is the imperfect *cadence* of its THIRD; the note 1 of the former in plus; the 5 of the latter in minus: and, reciprocally, the *precadence* of the third of every TONIC is the neuter *precadence*, less note 5 of that TONIC, and is completely its false and its minor *precadence.* (See § 24, p. 121.)

VII. The *precadence* of every TONIC is, by means of the suppression of the sound 5, the *transcadence* of its fourth.

VIII. The *transcadence* of every TONIC is the incomplete and imperfect *precadence* of its fifth (the note 5 of that *precadence* being wanting).

IX. The *cadence* of every TONIC has two notes of both the cadence and the *precadence* of its SIXTH (or of its *lower* THIRD); it is therefore its semi-precadence.

The example to be found at line 11th of this section shows, also, that though the *transcadence* be a true *cadence*, the key does not change from *Do* natural to *Fa* natural until the emission of the *Si* flat, which does not belong to the gamut of *Do* natural, has taken place:—and, in the same manner, that though the *precadence* be a real *cadence*, the key also does not change from *Do* natural to *Sol* natural until after the emission of the *Fa* sharp, which does not belong to the scale of *Do* natural. (See Chap. VIII, § 38).

The *example* in the present section suffices, therefore, to leave it clearly and evidently demonstrated, "that all harmonical matter consists of two chords only, viz. *precadence* and *cadence*," known to this day, among the thousand chords of a fantastic existence, under a multitude of useless special names, of which we shall only mention those of *consonant*, *dissonant*, *perfect* and *imperfect*, *tonic*, *authentic*, and *plagal; minor third*, *fifth*, and *seventh; dominant*, *mediant*, &c. &c.

§ 45. Before we proceed farther, we shall call the reader's close attention to some important rules and observations which belong to the section of *Harmony*, as well as to that of *Counterpoint*, but which he must consider as preliminaries necessary to the easier and more perfect understanding of the special rules of counterpoint contained in the next and following chapters.

General Rules and Observations.

I. From the two tetrachords of the scale of *Do* natural are drawn the three groups or chords of the *Typometer*, and they are formed by placing the four notes of the second tetrachord above the four notes of the first. This is demonstrated in *Prolegomena*, § 40, p. 77, which shows also that the two first chords are *modic*, because they employ the notes 3 and 6, whether in the major or minor *mode*, whilst the third group is *immodic* or neuter, admitting neither the 3 nor the 6.

II. The first tetrachord of *Do* is the second tetrachord of *Fa*, and the second tetrachord of the same *Do* is the first tetrachord of *Sol*. This fact clearly elucidates why the first flat that is placed at the clef is the *Si*, B, and why the first sharp is *Fa*, F; for if, in the first instance, the *Si*, F, was not flat, there would not be between the third and the fourth, and between the fourth and the fifth, the interval required in the major mode, viz. a semitone after the third, and a tone after the fourth; and if, in the second instance, the *Fa* F, was not sharp, there would not be the interval required in the same mode, of a tone between the sixth and the seventh, and of a semitone between the seventh and the tonic.—See the Table of Heptachords, Chap. III, p. 97, and the Observations upon it, p. 99.

III. There it was shown that by the addition of a tetrachord to the first tetrachord of the scale of *Fa*, F, in descending, will be found the second of the essential flats, *i. e.* that of *Mi*, E; and by the addition of a tetrachord to the second tetrachord of the scale of *Sol*, in ascending, is found the second of the essential sharps, which is that of *Do*, C: and so on are successively found all the other flats and sharps. The table of heptachords shows how, according to this order, the natural sounds successively become altered and disappear, as the seven flats or the seven sharps progressively spring up, until the whole scale has become all sharps or all flats, which is the same thing as to remain all natural.

By this operation are produced the twenty-one nominal sounds, which have given birth to as many keys, or rather the twenty-one perceptible sounds, which may be taken for note 1 of a diatonic scale. But the reader will observe that it does not produce the twenty-one keys, unless it is continued up to the appearance of the five first double sharps, and down to that of the first double flat; for the keys of *Sol*♯, *Re*♯, *La*♯, Mi♯, Si♯, and *Fa*♭, are not found in the Typometric table, but it offers those of their homogeneous Tonics: *La*♭, *Mi*♭, *Si*♭, *Fa*♮, *Do*♮, and *Mi*♮.

The reader, who well knows that there are only twelve real sounds, will observe that the seven keys produced by the generation of the sharps, and the seven other keys produced by the generation of the flats, being joined to the *unaccidented* key of *Do*, make altogether fifteen keys; but let him observe also, that the three Tonics of *Do* ♯, *Fa* ♯, and *Do* ♭, do not produce keys really different to the ear from those of their homogenous Tonics, *Re* ♭, *Sol* ♭, and *Si* ♮. He will do well to peruse again on this account the §§ 41, 42, 43, and 44 of the Elements, p. 33 and following: in this Grammar, § 14, Chap. IV, page 108 and following; and, finally, the Rule 21st, drawn from the Observations of the Typometric Table, Chap. V, § 19, page 116. It is important not to forget that "the last sharp added is always note 7, and the last flat note 4."

IV. The minor sixth, *Si* ♮, *Sol* ♮, of the scale of *Do*, is the major third *Sol* ♮, *Si* ♮, of the scale of *Sol* (see Elements, p. 48), which sufficiently proves that the scale of *Sol* ♮ begins with the second tetrachord of the scale of *Do*, as the scale of *Fa* ends with the first. This truth has, besides, been demonstrated in the table of heptachords. It is evident, therefore, that, in order to form the scale of any key whatever, *i. e.* to reduce it to only one octave, it is necessary to take the two half-octaves of the scales of two other keys (of those of *Fa* and *Sol* to form the key of *Do*, for instance: *Do, Re, Mi, Fa, Sol, La, Si, Do*). For this reason, its three perfect chords of the *Typometer*, or rather the three complete chords of its Typometer, are grounded upon the three sounds, *Do* 1, *Fa* 4, and *Sol* 5. The reader is requested to apply this example to the formation of all the scales; which in order to perform, let him draw the long line of tetrachords necessary to that purpose.

§ 46. V. The four sounds, 2, 4, 6, and 7, of any scale, are in dissonance of second with some of the other three sounds of the same scale, viz. 1, 3, and 5; therefore, as soon as one of these four sounds is introduced into the *cadence*, it destroys it and changes it into an imperfect *precadence*, or imperfect dissonant chord.

VI. All the octaves of a sound are, in harmony, the same thing as the unison, and consequently bear the same number as the sound of which they are the upper or lower octaves; and, having the same number, it is clear they do not produce a consonance nor dissonance different from that produced by the sound of which they are the upper or lower octaves.

VII. The addition of another third, either superior or inferior, to the two-thirds of which every *cadence* is formed, would immediately destroy it by the introduction of the dissonances of second;

which dissonances (in the key of *Do*, for instance) would be the seconds, *Sol—La*, or *Si—Do*, or *La—Si*. For this reason, the *cadence* cannot consist of more than two thirds; the inferior of which declares the *mode*, as being the first in the order of the scale.

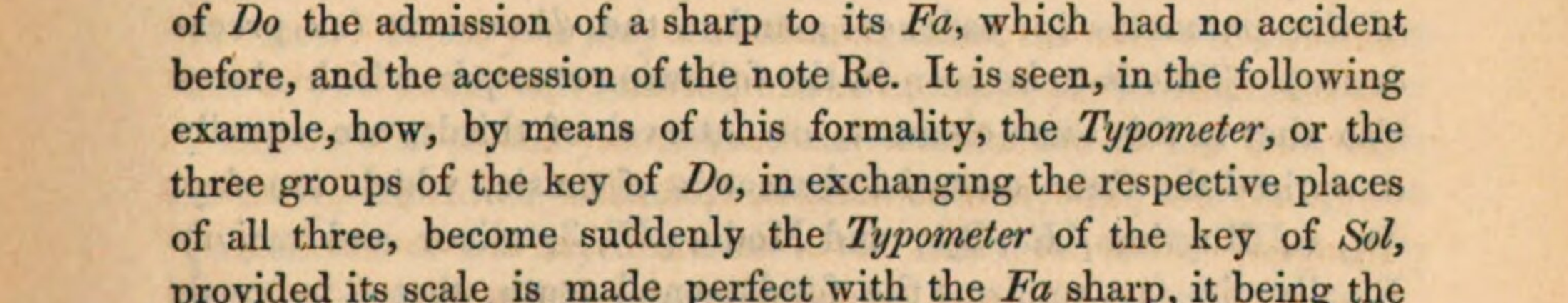
VIII. The second group (or *transcadence*) possesses the two qualities of its *cadence*, viz. those of being *modic* and *consonant*; because it employs the note 6, and does not admit of *dissonance*, *i. e.* of the interval of second. All the transcadences of the keys in use are in the *Typometric Table*, p. 112.

IX. As the *precadence* is the only chord admitting of *dissonance*, wherever and whenever the note 7 (which belongs to the *precadence*) is to be found, there may be *dissonance*, and the note 4 may consequently be employed, as it is dissonant with note 5.

X. Every *precadence* ought to be followed by a chord whose typometrical bass is four degrees higher than its own. This is demonstrated in § 72 of the *Prolegomena*, page 88, in which the typometrical bass ascends always four degrees after every third group or *precadence*, viz. from *La* to *Re*, from *Re* to *Sol*, from *Sol* to *Do*, from *Do* to *Fa*, and so on.

§ 47. XI. The third and first groups of the key of *Do*, after the suppression of the note 4 of its precadence, have nothing to do but to change their respective place in the *Typometer*, in order to become first and second groups of the key of *Sol*. This change suffices to effect the introduction of the key of *Sol*; but it is necessary, in order to *regularize* it, to force upon the *transcadence* of *Do* the admission of a sharp to its *Fa*, which had no accident before, and the accession of the note Re. It is seen, in the following example, how, by means of this formality, the *Typometer*, or the three groups of the key of *Do*, in exchanging the respective places of all three, become suddenly the *Typometer* of the key of *Sol*, provided its scale is made perfect with the *Fa* sharp, it being the first that destroys the scale of *Do*, both in the generation of the general gamut and at the clef.

Typometer of the Key of Do. *Typometer of the Key of* Sol.



XII. The *Typometer* (or the three groups) of the key of *Do* become the *Typometer* of the key of *Fa*, by changing the place of these three groups, provided the *transcadence* (or second group) of the key of *Fa* is made perfect by the introduction of the *Si* flat, which is the first flat that destroys the key of *Do*, both in the generation of the general gamut and at the clef. This is thus exemplified:

Typometer of the Key of Do.

Group 1st of *Do*, 3rd of *Fa*, less its *Si* flat, 4.

Group 2nd of *Do*, 1st of *Fa*.

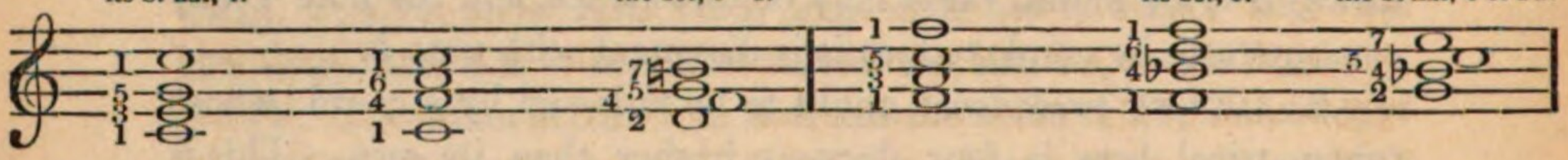
Group 3rd of *Do*, 2nd of *Fa*, plus the *Sol*, 5—2.

Typometer of the Key of Fa.

Group 1st of *Fa*, 2nd of *Do*.

Group 2nd of *Fa*, 3rd of *Do*, less its *Sol*, 5.

Group 3rd of *Fa*, 1st of *Do*, plus the *Si* flat, 4 of *Fa*.



This example and the preceding show that the three groups (or typometrical chord) of the key of *Do* are also those of the keys of *Fa* and *Sol*, by means of the sole addition of the flat or sharp, in which those two keys differ from that of *Do*.

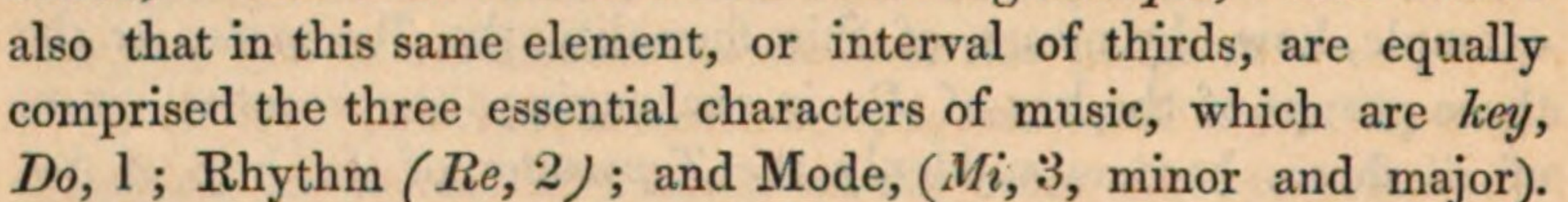
The reader is particularly desired to apply the two preceding rules to the *Typometers* of all keys bearing between them the relation of 1, 4, and 5; and to the observations and rules drawn from the Table of Heptachords, page 99, and following.

XIII. In the interval of *thirds* are contained the elements and final operation of the melody (or singing succession of sounds); of the *consonance* (or cadence); and of the *dissonance* (or precadence). This is to be seen in the following *example*, which shows also that in this same element, or interval of thirds, are equally comprised the three essential characters of music, which are *key*, *Do*, 1; Rhythm *(Re, 2)*; and Mode, (*Mi*, 3, minor and major). Finally, this fact confirms the fundamental truth, that "in music there are only *two chords* essentially different; viz. the *consonant* (or *cadence*), and the *dissonant* (or *precadence*);" since the *pure transcadence* of a key is the *cadence* of another, and consequently *consonant*, as has been demonstrated in § 44, p. 143, and still better in the following example: ~~of the present treatise~~:

Pure cadence of *Do*.
Pure transcadence of *Sol*.
Incomplete precadence of *Fa*.

Pure cadence of *Sol*.
Pure transcadence of *Re*.
Incomplete precadence of *Do*.

Pure cadence of *Re*.
Pure transcadence of *La*.
Incomplete precadence of *Sol*.



which presents, from the gravest sound of the first chord to the acutest of the third, an uninterrupted succession of *thirds*, both major and minor; which, in three chords of three notes each, gives twice the diatonic scale in its natural syllabic progression; which contains dissonance, because, between note one and note third, the dissonant second is concealed; as between note 3 and note 5 is comprised the note 4, the non-utterance of which renders incomplete the precadences herein mentioned; with the expression of which, each precadence contains either two-thirds separated by the second, 4—5; as *Sol, Si* flat—*Do, Mi; Re, Fa—Sol, Si, &c.* or, by a simple inversion, a series of three thirds in their natural order, as *Do, Mi, Sol, Si* flat, *Sol, Si* natural, *Re, Fa, &c.*

XIV. It is now time to revert to the rule stated in Chap. VII, § 25—one of the most valuable for modulating, changing of key, and consequently for transposing. This retrospection to that important rule will also afford to us an opportunity of giving some more development to the *only rule of modulation and transition*, contained in Chap. VIII, § 40. All that has been said in the two § § just alluded to, was the proper, the sufficient language in the section of *Harmony:* that which is here to be added, is the necessary extent, which, in the present section of *counterpoint*, it is convenient to give to the mere exposition of the principle.

Before modulating, ascertain whether there are three sounds, or two, or one at least, common between the cadence of the key you wish to leave and the precadence of that into which you wish to enter. If so, you may modulate at once; but if not, pass for a bar or two to one scale having one or more sounds in its precadence common with as many sounds of the cadence of the key you wish to leave, and in its cadence, common with as many sounds of the precadence of the key into which you wish to enter. This precaution of compatibility being taken;

Since every chromatic sign that raises produces a seventh, apply a sharp at an accented part of time to the note which, so raised, will be note 7 of the key into which you wish to enter; join to that note 7, immediately at its appearance, the other three sounds of the precadence of the key you are going to, and the modulation is made. For instance, if you intend passing from the key of *Do* natural major to that of *Sol* natural major; ascertain first whether they are compatible or not, and you will find that between the cadence of *Do* and the precadence of *Sol* there is one sound common to both; viz. the *Do* natural. Prolong, therefore, that *Do* natural on a thesis; and, as you know that the note 7 in the key of

Sol is *Fa* sharp, sharpen the *Fa*, 4, in the key of *Do*, to render it 7 in that of *Sol:* place it above the *Do* natural already prolonged on the accented part of time, and to these two notes join the other two notes of the precadence of *Sol;* viz. the *La*, 2, and the *Re*, 5; and, on striking that precadential chord, you have modulated in *Sol.*

If, immediately after, you pronounce the cadence of *Sol*, you are completely in the key of *Sol.*

Since every chromatic sign which lowers produces a 4, apply at the accented part of time a flat to the note which, so lowered, is to be sound 4 of the key into which you wish to enter; join to it, in the act, the three remaining sounds of its precadence, and the modulation is made.

For instance, if you intend to pass from the key of *Do* natural major into that of *Fa* natural major, you begin by ascertaining whether they are compatible or not; and you find that they are highly so, on seeing, in the precadence of *Fa*, the three sounds of the cadence of *Do*, common to both without any alteration; viz. *Sol*, *Do*, *Mi;* you therefore prolong them all on an accented part of time, joining to them in that same thesis the *Si*, seventh of *Do*, after having flattened it to render it note 4 of *Fa;* and the sole utterance of that precadential chord makes the modulation in *Fa.* If, immediately after, you pronounce the cadence of *Fa*, you are then completely in the key of *Fa.*

When notes common both to the cadence of the key to be left and to the precadence of the key to be taken, are not found in the cadence of the former, they may be sought for in its transcadence; and then the key may be quitted by its transcadence, which, as our reader knows, is a second cadence, modic as the first, and subservient to it; but, in this case, the transcadence must be immediately preceded by its cadence.

The mode of operating just explained, refers to modulations and transitions in harmony. The only difference, in order to effect them in a simple melody, is to successively articulate the sounds which, in harmony, you articulate at once.

All that has been stated from the beginning of the present § is applicable to the thirty keys in use in the two modes.

CHAPTER X.

THE GOLDEN RULE.

§ 48. We shall now reduce to one single rule those of which we made mention at the conclusion of Chapter VIII, § 42, relating to the *motion*, *direction*, and *management* of voices, in simultaneous parts. By means of this one rule alone, all those qualities which the art requires will be attained on the one hand; while, on the other, those defects which it prohibits will be avoided, in accordance with the ear, *i. e.* with nature.

RULE ABSOLUTE, SOLE, AND UNIVERSAL,

For the Motion of simultaneous Melodies or Parts, either for the Voice or for Instruments, or both united.

"Never produce the intervals or sounds of fifths or octaves by means of two voices or parts which ascend or descend at the same time."*

It is generally admitted that this prohibition only takes effect between the most acute and the gravest voices, *i. e.* between the treble and the bass, and consequently never between the intermediate parts.

It is presumed that the reader is already sufficiently acquainted with the *solfeggio* to understand what are a fifth and an octave. We go on, therefore, to point out, by means of examples, the observance and the infraction of this fundamental rule, called "*the golden rule*," which saves so much study and labour. The reader would do well to examine thoroughly that part of these examples which is written in the ordinary letter, and afterwards to write them himself in the musical character, without looking at the notes which his master will write, unless for the purpose of comparing his attempt with a correct example. This exercise is an essential part of the usefulness of the lesson.

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* See the reasons for this rule in the following Treatise, and look at the Analytical Index.

Example of Octaves well given.

Melody.	In descending Fa, Mi.	In ascending Re, Mi.	Stationary Mi, Mi.	In descending Sol, Mi.	Stationary Mi, Mi.	In ascending Do, Mi.
	Tenth *Octave*	*Sixth* *Octave*	*Tenth* *Octave*	*Tenth* *Octave*	*Sixth* *Octave*	*Sixth* *Octave*
Melody.	Re, Mi.	Fa, Mi.	Do, Mi.	Mi, Mi.	Sol, Mi.	Mi, Mi.
	In ascending	In descending	In ascending	Stationary	In descending	Stationary
	Good	Good	Good	Good	Good	Good

Example of Fifths well given.

Melody.					
In ascending	Si,	Re.	*Third*	*Fifth*	
	Do,	Re.	*Third*	*Fifth*	
In descending	Mi,	Re.	*Sixth*	*Fifth*	
	Re,	Re.	*Third*	*Fifth*	
In ascending	La,	Sol.	*Third*	*Fifth*	
	Fa,	Sol.	*Sixth*	*Fifth*	
In descending	Sol,	Sol,	*Sixth*	*Fifth*	
	Si,	Sol.	*Third*	*Fifth*	
In ascending	Re,	Sol.	*Third*	*Fifth*	
	Re,	Re.	*Third*	*Fifth*	
In descending	Fa,	Re.	*Tenth*	*Fifth*	
	Re,	Sol.	*Tenth*	*Fifth*	

Stationary — Good.
In ascending — Good
In descending — Good
In descending — Good
In ascending — Good
Stationary — Good
In ascending — Good
In descending — Good
In descending — Good
In ascending — Good
Stationary — Good
In ascending — Good

Example of Octaves and Fifths badly given.

Melody.	In ascending		In descending		In ascending		In descending	
	Do,	Re.	Mi,	Re.	Do,	Re.	Mi,	Do.
	Tenth	*Octave*	*Sixth*	*Octave*	*Fifth*	*Fifth*	*Sixth*	*Fifth*
Melody.	La,	Re.	Sol,	Re.	Fa,	Sol.	Sol,	Fa.
	In ascending		In descending		In ascending		In descending	
	Bad		Bad		Bad		Bad	

We do not give to our reader these three examples in music, with the design of recommending him to write them himself with the notes of the three fundamental clefs, but for the purpose of accustoming his eyes to be offended at the sight, and his ears to be hurt at the sounds, of bad fifths and bad octaves.

He sees, doubtless, how simple this rule is, and how easily it may be imprinted on his memory; but he is not aware how continually it is violated by Counterpointists, both ancient and modern; for, in consequence of their not having found the true method of explaining it, they have contented themselves with this vague expression: "It is prohibited to give two fifths and two octaves in "succession." This is certainly sufficient to forbid the fault, but not to point out the easy and infallible method of avoiding it; and it is for this, we repeat, that their compositions are full of octaves and fifths in succession, both *uttered* and *concealed* (for there are in music these two kinds of faults of fifths and octaves). It is, however, these transgressions of the natural harmonical law, and other similar faults, that are called *licences;* and it is these *licences* that the learned and severe Father Martini excuses in these very terms: "If we have recourse to authority, we shall seldom find in con- "formity with rules that which is permitted and even admired in "the most celebrated authors." It is superfluous to comment on a doctrine so astounding—let us return to the lesson.

CHAPTER XI.

COUNTERPOINT OF TREBLE AND BASS.

§ 49. It appears from the definition which we have given of Counterpoint, Chap. IX, § 43, that every melody bears in itself and dictates its own proper harmonization, whether it be a *cadence* or a *precadence*; so that every note of a melody is considered as note 1st, or 3rd, or 5th, if it is wished to harmonize it as a *cadence;* or it is considered as note 2nd, or 4th, or 5th, or 7th, if harmonized as a *precadence*. We shall commence by an example of two voices, which may be the treble and bass. Let us take, for instance, the scale of Do natural, major mode, sung by the treble, and let us

find a good bass, observing strictly the rule called the golden rule, which we gave in the foregoing chapter on the subject of octaves and fifths. The reader would do well to write on the stave the following example as he gradually reads it, and to pay particular attention to the numbers given to each note of the treble.

Treble .... 1 .... 2 .... 3 .... 1 ... 5 .... 3 .... 7 .... 1ve.

Do♮ Re♮ Mi♮ Fa♮ Sol♮ La♮ Si♮ Do♮

In every musical composition the bass ought always to begin and end the piece by the note 1, which is called the *tonic* or *key-note*, because it is the principal, or first of every scale or key. Let us now examine the bass, which the knowledge acquired by the perusal of this and the preceding chapters enables us to give correctly to the scale sung by the treble.

Example.

	1	2	3.	1	5	3.	7	1ve
Treble:	Do♮	Re♮	Mi♮	Fa♮	(*) Sol♮	La♮	Si♮	Do♮
	In ascending		:	In ascending		:	In ascending	
		Fifth. Good			Fifth. Good			Octave. Good
	1	5	1	5	1	1	5	1
Bass:	Do♮	Sol♮	Do♮	Do♮	Do♮	Fa♮	Sol♮	Do♮
	In descending		:	Stationary		:	In descending	
Chords produced by the harmonization.	C	P	C	C	C	C	P	C
Keys:	Do♮	Do♮	Do♮	Do♮	Do♮	Fa♮	Do♮	Do♮

Analysis of the foregoing Example.

The treble has sung, exclusively in appearance, the complete scale of the major mode in the key of *Do* natural; but in reality we have not always considered it so. The reader sees, consequently, that the *Fa* natural is found first in the treble, and afterwards in the bass, marked No. 1, which necessarily indicates the *cadence* of *Fa* natural; because, in the 42 musical keys, there is none in which the *Fa* natural is note 1, unless in that of this *Fa* natural itself. And we have given that number to this *Fa* natural, not because the *cadence* of *Fa* natural differs from the *transcadence* of *Do*

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* We beg to inform the master that it is not yet time to *resolve* fourths.

natural, but in order to give the reader the first practical proof of this axiom, that "*All the notes of the scale are so many tonics or* "*notes* 1 *of an equal number of keys, and bear in themselves the* "*union or accompaniment of their respective notes* 3 *and* 5." To continue, the reader should note down this bass, leaving a blank of two staves between the treble and bass, not forgetting to place over both the numbers we have given to each note. This being done, we proceed to write the part of the counter-tenor on the stave next to that of the treble, carefully observing the simple rules which we already know, and always attending to the numbers of the treble and bass, which lead us by both hands (as it were) to our object.

§ 50. *Example of Counterpoint of Treble, Counter-tenor, and Bass.*

Treble of the preceding Example.	1 Do	2 Re	3· Mi	1 Fa	5 Sol	3· La	7 Si	1^{8ve} Do
		In ascending Octave						
Counter-tenor now added.	5 Sol	4 Fa	3· Mi	5 Do	3· Mi	1 Fa	4 Fa	3 Mi
		In descending	In descending		In ascending			
Stave for the Tenor.				Octave		Octave		
Bass of the preceding Example.	1 Do	5 Sol	1 Do	5 Do	1 Do	1 Fa	5 Sol	1 Do
			Stationary		In descending			
Chords.	C	P	C	C	C	C	P	C
Keys.	Do♮	Do♮	Do♮	Fa♮	Do♮	Fa♮	Do♮	Do♮

Analysis of the foregoing Example.

For the first chord, we had at our disposal the notes 3 and 5. We have chosen 5 from taste, and not from necessity, with the sole design of beginning with the *cadence* in its natural order: *Do—Mi—Sol—Do.* We shall here remind the reader, that, in this Example, as well as in every piece of harmony, and in every score, the chords do not present themselves confined within the narrow compass of only one octave; but, in consequence of the difference of the quality or register, that is, the acuteness or the gravity of each voice or each instrument, it happens that their melodies, *i. e.* their different parts, are found in various octaves. This observation will suffice to convince us, that, for the purposes of harmony, octaves are the same as unisons, and that taste and experience afterwards point out the choice of the acuteness or the gravity in which it is necessary to place the melodies and their harmonies, to produce an effect which to the ear may be more or less soft or energetic, more or less sad or gay, or which may present a character of more or less uncertainty or restlessness. The counter tenor then, which makes note 5 its point of departure, continues its melody in search (as it always should do) of the nearest note to that which it leaves, in order that the execution may be easier for the voice, though able to reach every interval which would lead it to another note of the chord, which precaution is unnecessary in composing for instruments, as the latter can pass with certainty from any one degree to another of the *melodic* scale. The reader will observe, in the course of the examples, that the octaves in it are *well* given, because care has been taken that the two voices, or parts, by which they are formed, do not descend or ascend at the same time.*

§ 51. In all that follows, nothing is said to the reader which, from the knowledge he has already acquired, he is not able to understand, and even perform of himself. We shall therefore, confine ourselves to recommending him to meditate on this example with attention; because it will, in a short time, prove highly useful to him, and enable him to perform at once, and correctly, what by the ancient method he would not have been able to accomplish at all, after a year's study. The old method calls that exercise *a Counterpoint of note against note, for three voices.* The reader,

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* We have already stated that the rule may be infringed in the voices or parts, which are neither the highest nor the lowest; but yet it behoves the reader to endeavour, in these first exercises, to adhere strictly to it.

however, will do still more to-day ; for he will complete this counterpoint, making it for four voices, or parts, by the addition of that of the tenor, still wanting in it. It is already so easy for him to find the notes of this part, that if we were not to write it, he certainly could do it himself without a fault ; but we prefer completing this example, in order that he may afterwards compose some others entirely of his own invention.

Treble already given:	Do 1	Re 2	Mi 3·	Fa 1	Sol 5	La 3·	Si 7	D 1 8ve
				In ascending	Octave Good			
Counter-tenor id.	Sol 5	Fa 4	Mi 3·	Do 5	Mi 3	Fa 1	Fa 4	Mi 3
Tenor now added:	Mi 3 ♮	Si 7	Sol 5	La 3·	Sol 5	La 3·	Re 2	Sol 5
		In descending	Fifth Good	In descending	Fifth Good	In descending	Fifth Good	In descending
Bass already given:	Do 1	Sol 5	Do 1	Do 5	Do 1	Fa 1	Sol 5	Do 1·
		In ascending		Stationary		In ascending		Fifth Bad In descending
Groups or Chords produced by the Harmonization:	C	P	C	C	C	C	P	C
Keys:	DO ♮	DO ♮	DO ♮	FA ♮	DO ♮	FA ♮	DO ♮	DO ♮

See Example 42, *Plate* 13.

Observation on the Tenor Part added in this Example.

The note *Do* 5 is not found in the antepenult chord, because it could not possibly be placed there without giving a *bad* fifth against the bass, *i. e.* a succession of fifths*; and, in that case, omitting a note is preferable to employing it incorrectly. The old school, in this case, prescribes rests as the only remedy, *i. e.* the silence of the compromised part; and this is also the course we advise all those who write freely, to pursue; but as we have imposed upon ourselves, in this example, the task of not interrupting, for one single instant, the melody of any part whatever, we have been obliged to make the tenor sing the note 3 in octave with the treble, just as the counter-tenor sings the note 1 in octave with the bass. The best would have been to place *Re* at the counter-tenor; and the chord then would have been the *cadence* of *Re* instead of that of *Fa*. It is a general rule in music, that the note 3 is more essential in the *cadence* than the note 5, because the former points out the *mode*; an advantage with which the latter is not endowed, notwithstanding its pompous old title of *dominant*. As to the *bad* fifth uttered in the last chord by the tenor against the bass, it is justified by the necessity of not depriving the ear of the harmonical complement at the final *cadence*. It is that necessity which causes the ancient theories to acknowledge as lawful and legitimate, in this case only, *bad* fifths and octaves, without excepting even those that are given against the bass, or uttered by the treble.

This example is now concluded; and in its composition alone, we have taught our reader more rules and doctrines than are to be found, of any use, in many folio volumes of the ancient masters.

CHAPTER XIV.

RHYTHM.

Preparatory Explanations.

§ 53. Following the same order he has seen us observe in the composition of the preceding example, the reader will exercise himself in composing others, without the assistance of his master,

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* It is evident that when two fifths or two octaves are in succession, the last is produced by two parts ascending or descending at the same time. Any succession of fifths or octaves is consequently a fault, according to the golden rule.

to whom he will give a full and minute account of his own essays, listening with the greatest attention to his observations and corrections. We give him this advice, because the composition of one single example, which he may twice or thrice recompose, after having got it corrected as many times, will improve him much more than that of ten examples which he would leave uncorrected. The reason of it is, that when we treat of the exact part of music and not of invention, we ought to lay aside imagination, taste, and fancy, in order to direct our whole study towards a meditative discerning between good and bad harmonization. The reader must not employ, in these exercises, more sharps or flats than those belonging to the key in which they are written. He will easily notice that the melody of the tenor has no fluency, on account of the repeated skips which are found in it. We have purposely introduced that defect, leaving him the care of making it disappear in a new composition of his own on this same example.

The pupil is warned that he must not read any paragraph of this lesson before he thoroughly knows all those which precede, having put them in practice; for such an anticipation would impede him very much. In the persuasion that he will not neglect this advice, we will continue the explanation.

§ 54. We have learned, in the *solfeggio*, that one of the essential characters of all melody is the repartition or measure of its duration, in equal parts; and we likewise know that, as measures or bars divide the melody, so the strikes or parts of time divide the bars; and moreover, that each measure or bar, as well as each part of time, have a principal part, which is the first, and another strike or auxiliary and subaltern part which is the last*. These

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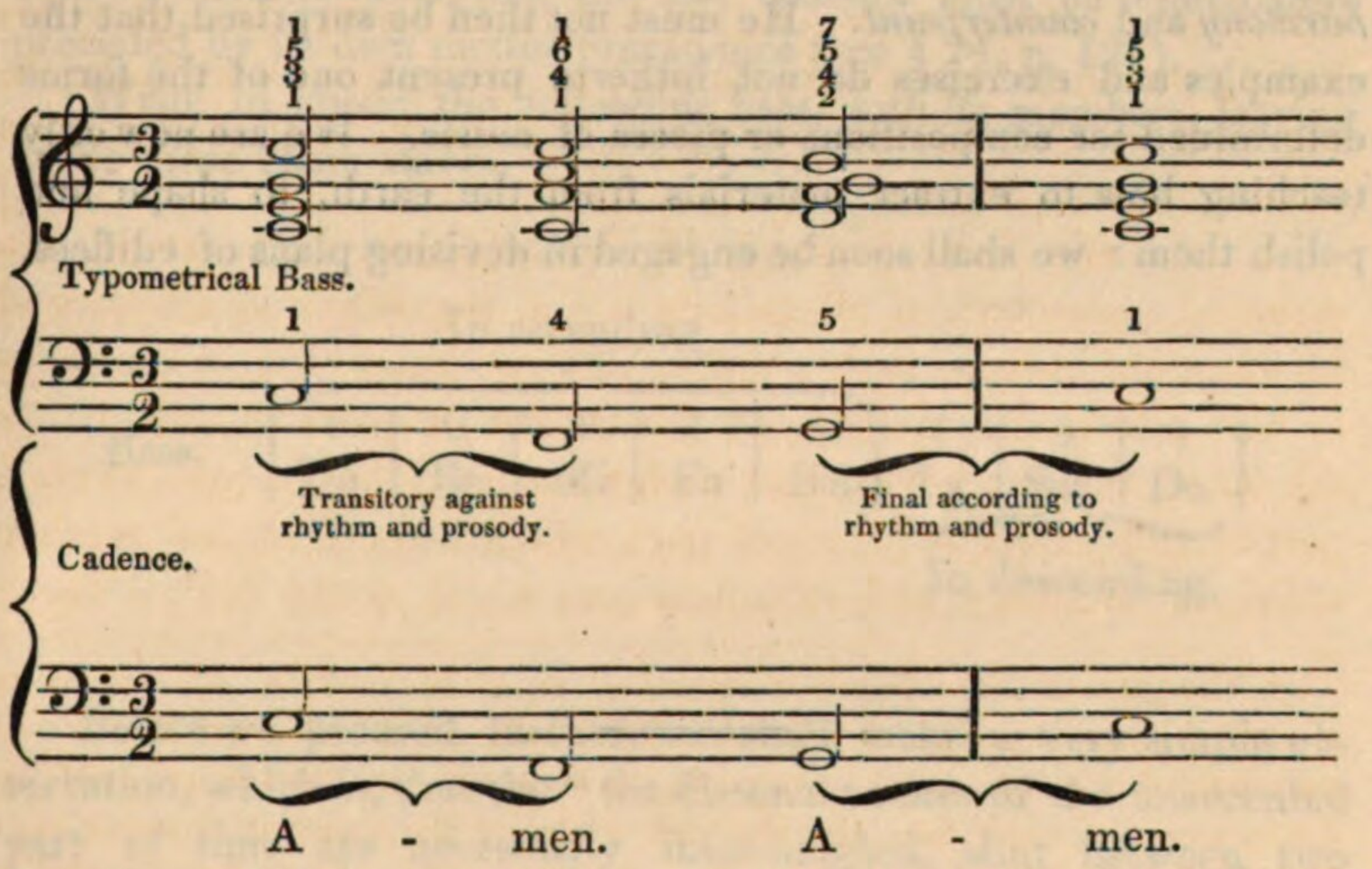
* The parts of time of each measure, all equal in duration, are not so in musical rhythm; some are strong, others are weak. In the measures of *common time* divided into four, or into two parts, the accented parts are the odd ones: in the measures of *triple time*, the first part is always the accented or strong one. The rhythmical strength is occasionally prolonged on the second; but the third is always unaccented, or weak.

If each part of *Time* be subdivided into two other equal parts, which may be still called parts of *Time* or *semi-parts* of *Time*, we shall again have *strong parts* of Time for the first half, and *weak parts of Time* for the second; and there is no division of a part of Time which cannot be sub-divided anew in the same way. Every note which begins upon the *weak part*, and ends upon the *strong part*, is a note misemployed; and, because it hurts and offends the measure in some way, it is called *syncopation*. As the *strong* or *accented part* of a measure is that most remarked by the ear, the *weak* or *unaccented part* is merely a passage to arrive at it; and hence, the notes of the *weak parts* have received the name of *passing notes*. The dissonant fourth, the tritone, the minor fifth, and

strikes, or parts, are called *strong* or *accented parts of Time*, or the *Thesis:* and the weak, the *unaccented part* of time, or the *Arsis.** In the binary, or unequal measure, consequently, there are two strikes or *parts of time;* the first strong or *accented*, the second weak or *unaccented;* and as music is the combination of time and sound, nature has destined its two only chords to these two rhythmical strikes—the *cadence* to the strong, and the *precadence* to the weak. For this reason, if the *cadence* is used at the *Arsis*, and the *precadence* at the *Thesis*, it will happen that the music will be lame, if we can speak so, and will not be susceptible of continuation. These two rhythmical strikes of music correspond in language to the short and long syllables. This is demonstrated in the following *example*, which proves that the long or accented syllable represents the *cadence* in language, and that the short or unaccented represents the *precadence*. The second *amen* is consequently good, and the first bad; because in the first the short syllable falls on the *cadence*, and in the second on the *precadence*.



The second device or operation of the art which we are gradually unfolding is derived from that observation: this second operation or form is called *counterpoint of two notes against one.* This denomination clearly shows that the same note, which in the first counter-

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the other dissonances, all intervals which serve to pass from one consonance to another, are therefore, in reality, only *passing notes*, See Elements; Chap. II, § II, p. 8; Chap. VI, § 62, p. 59; and *Prolegomena*, § 70, p. 86.

* The reader knows, now, that music has three essential characters, which are the *Key*, the *Mode*, and the *Rhythm*, and that every musical composition wanting one of these characters, cannot be perfect.

point has been considered entirely as consonant, or harmonical, and has been accompanied with other notes of an equal duration to its own, may be now considered as harmonical, in its *first half only*, and may be accompanied either in a superior, or in an inferior part, not by a single note as before, but by two, the first of which should be harmonical or typometrical, and the second indifferent, foreign to the chord of the first, of an equal duration with this, and forming dissonance with the long note of an equal duration to that of both. This fact is the origin and foundation of the everlasting and ancient doctrines on the *active* and *passive effects* on the *preparations*, *percussions*, *resolutions*, *exceptions*, *licences*, *elevations*, *descents*, *reciprocities*, &c. &c. &c. of dissonances: all things which we shall teach in a short paragraph at the proper moment, which will not be long to come.

§ 55. The reader will not forget, that what has hitherto been done in the first section, as well as what we have already seen and have still to see in this second, is not called composition, but only *harmony* and *counterpoint*. He must not then be surprised that the examples and exercises do not hitherto present one of the forms determined for compositions or pieces of music. We are now only teaching how to extract materials from the earth, to shape and polish them: we shall soon be engaged in devising plans of edifices.

CHAPTER XV.

COUNTERPOINT OF TWO TO ONE.

§ 56. We are now going to compose a counterpoint of two notes against one, placing the one at the bass, and the two at the treble. We shall henceforth, in our exercises, make use freely, as our choice will suggest, of the cadences belonging to the different notes of the scale, yielding to the necessity of pronouncing the cadence of the reigning key only in the first and the last bar; because we are aware that this is an unavoidable law, as it is another equally uneschewable, that the last cadence must be immediately preceded by its own neuter precadence (see § 24, p. 121).

Write in music the following bass, with its members, leaving above three blank staves.

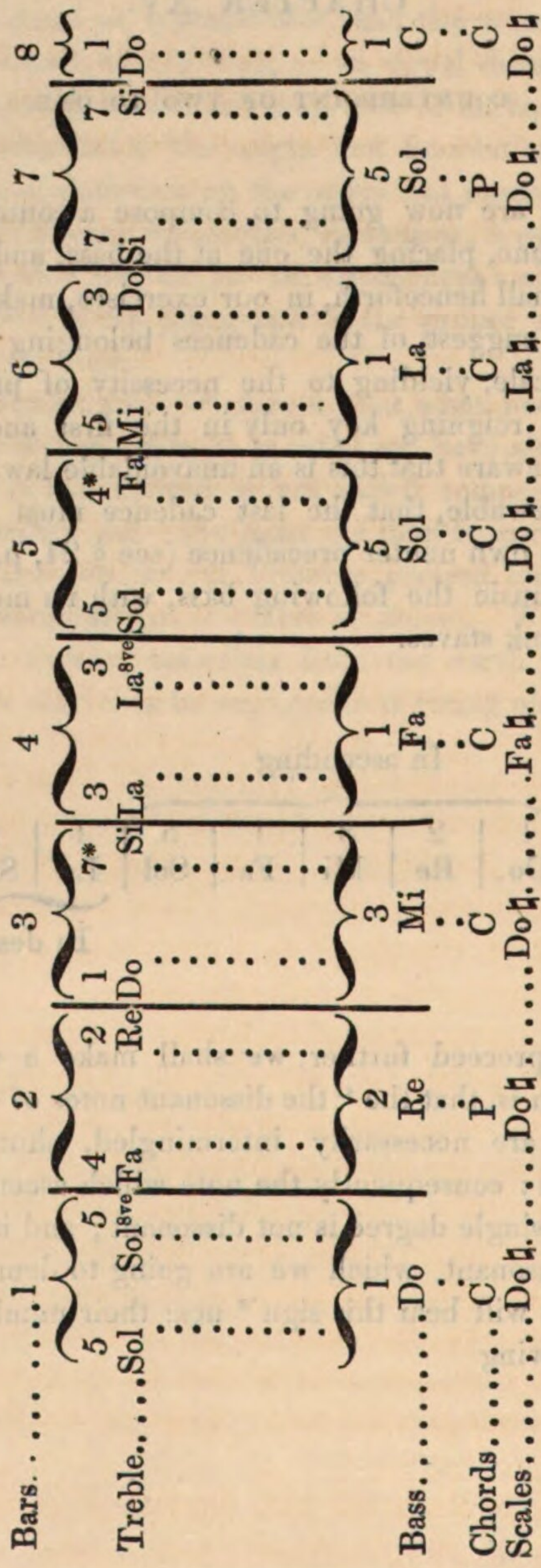
In ascending

Bass.	1 Do.	2 Re	3 Mi	1 Fa	5 Sol	1 La	5 Sol	1 Do

In descending.

Before we proceed further, we shall make a very simple observation, which is, that the " the dissonant notes of the unaccented part of time are necessarily intermingled, shut between two consonant notes: consequently the note which ascends or descends more than one single degree is not dissonant; and is therefore indispensably consonant, which we are going to demonstrate. The dissonant notes will bear this sign * near their numbers. Write in music the following

Example of Counterpoint of two notes against one on the anterior Bass.



§ 57. *Examination of the foregoing Example.*

Bar First. The skip at the treble, being of more than one degree, is not dissonant.

Bar Second. Idem.

Bar Third. The skip of the treble being of only one degree (*Do*, Si*) the *Si*, B, is dissonant, notwithstanding its being in the interval of fifth with the bass, which, walking towards *Fa*, F, claims the Si flat, B flat.

Bar Fourth. The skip at the treble, being of more than one degree, is not dissonant. In this measure comes the cadence of *Fa*, F, which, as we know, could be called *Transcadence* of *Do*.

Bar Fifth. The skip at the treble being in this bar of only one degree (*Sol* G, *Fa* F*), the *Fa*, F, is held as dissonant, and it really is the only note of the Typometer which gives an interval of *Second*, Fa F 4, *Sol* G 5; on which account that *second* belongs to the third group, or precadence; which, for this very reason, is the unaccented group, the weak part of time; as the cadence is the accented one, because it has no dissonance, and can admit of none.

Bar Sixth. The skip at the treble, being in this measure of more than one degree (Mi E, Do C), is not dissonant. From the note La, A, 1; and those at the treble, *Do*, C, 3, and Mi, E, 5; it is clear that the whole measure presents the cadence of *La*.

Bar Seventh. As there is no skip at the treble (Si B, Si B), both notes are evidently consonant. This bar, being the last but one, is and must be considered as a precadence of the key of *Do*, C, the reigning one in the present example.

The bass, in consequence of its having been composed the first, takes the name of *motive* (or *canto firmo*). The treble, on account of its having been composed afterwards and under the guidance of the motive, assumes the name of *counter-motive* (or counterpoint); whence we must infer, that in all musical composition there is no more than one motive and one counter-motive; and that the other two parts or voices which are subsequently added, composed dependently from the bass and the treble, fitted, framed, made to correspond with them, are nothing but the harmonic complement to which the Italians give the name of *ripieni*, and the French that of *remplissage*.

It is also to be deducted from the preceding observation, that the *motive* may be given by a superior voice or part, and the *counter-motive* by the bass, which we shall soon put into practice.

CHAPTER XVI.

COMPLEMENT OF THE FOREGOING COUNTERPOINT—AN ADVICE.

§ 58. What the reader has to do now, is himself to compose the harmonic complement, viz. the two interior parts of this example, which are the tenor, and the *contralto* or counter-tenor.

This task he will easily perform, by carefully observing the notes of the bass, and the non-dissonant ones of the treble or *Soprano*, as of the dissonant notes not the least notice is to be taken. He will give only one note per bar to the counter-tenor and to the tenor, in order to cause the counter-motive at the treble to outshine exclusively. We shall confine ourselves to guiding him in the first measure only, observing that in the bass and treble we already have the notes 1 and 5; whence it results that for each of the two parts to be added we have left only the note 3, or the duplication of one of the cadential sounds, 1, 3, 5. For, as the cadence has yet no more notes than those three sounds, it is evident that, in compositions of four parts, one of the said three notes must be doubled. The choice of the sound that is to be repeated freely belongs both to the taste and to the greater or less practice of the composer. In the present case, consequently, what is now stated suffices to enable the reader to elect at his pleasure the note of the tenor, as well as that of the counter-tenor. Not only in this first bar, but also in all those in which no use is made of the precadence, which, having four different sounds or notes, 2, 4, 5, 7, affords a distinct one for each part, if its four sounds are intended to be pronounced.

§ 59. This example being composed, and approved of by his master, the reader should exercise himself in recomposing it, varying the counter-motive, always under the frame and control of the same motive or bass; in which, owing to the rules he has already learned, he will experience no difficulty.

The time employed in the practice of an art or science is not to be reckoned as spent in learning its theory. In the Geneuphonic system, contrary to most of the others, difficulties become at every step less and fewer, so that when we come to that hitherto intricate labyrinth called the Fugue, our reader will find himself at home, will recognize every spot of the dedœlus; and will find the access everywhere opened, and all the issues easy, flowery, and perfumed. In one word, the most difficult part of the art is that which the reader already knows.

Here we beg to make a recommendation, which we have no doubt will be attended to, after the publication of this work; and it is, that, for its study, four pupils at least, should meet at the lesson of the same professor, in a room provided with large slates, or with a board on which red staves should be marked on a black ground, in order that the examples, composed in the sight of every one, should, both before and after their correction by the master, be immediately played by four instruments, or sung by four voices of correct intonations, for the purpose of the young practitioners submitting their essays to, and respecting that inexorable and infallible judge of music, the ear. The effect, the impression which such performances will cause on the pupils, cannot be conceived without having been experienced. In no other profession do rewards or punishment follow so closely on the observance or the infraction of the law, as in that of the musical composer who hears his own music; for if he has fallen into the least error, his ear, as another conscience, speaks loudly his wrong.

CHAPTER XVII.

COUNTERPOINT OF FOUR TO ONE.

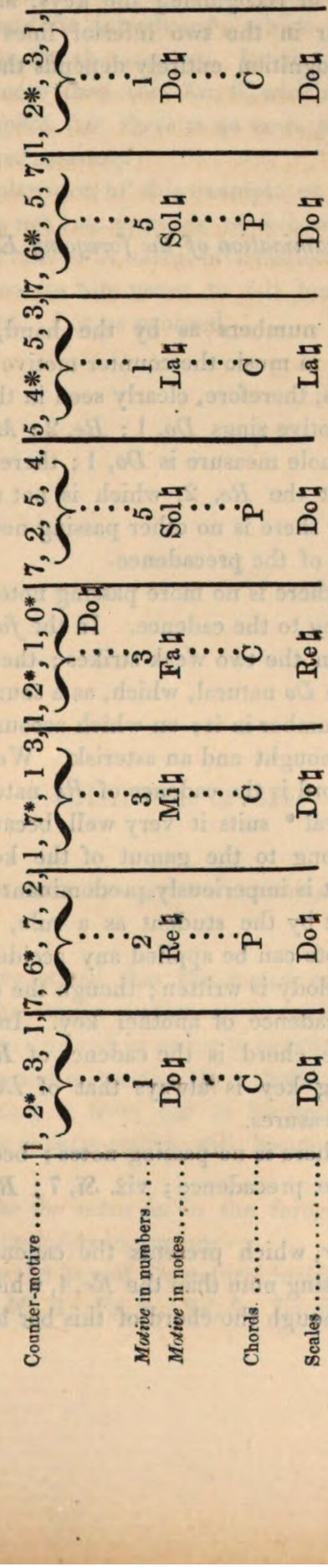
§ 60. In the same manner as in the unaccented part of the measure, we have held as indifferent both to harmony, and to the ear, the momentary dissonance of the note that is intermediate, viz. placed between two consonants or typometrical sounds; so, in the weak part of each time, in the weak half of each part of time, the note posterior to the strike, whether this be thesis or arsis, is not less insignificant. It is therefore obvious, that as there are counterpoints of two notes against one, there are also others of four notes against

one, that is to say, double of the former, as it necessarily has two typometrical notes; and other two which may be or may not be so, according to the composer's election. Our reader knows that those notes not typometrical, are named in English *passing notes*. The Italians call them *sdrucciolo*, and the French *notes glissées*. The state of instruction which our reader has already attained, renders the indication of the following example, by means of its cyphering, sufficient to enable him to correctly write it in music, in the key he will think proper; for we know that in harmony all keys are equal.

We shall take the same motive or bass as in the preceding example. The dissonant numbers of the counter-motive will, as before, be marked by an asterisk.

Let us suppose the key to be that of *Do*, C natural major.

Example of Counterpoint of four notes against one.



In translating into notes the figures of this example, the greatest care must be taken of recognizing the keys, and the chords indicated for each bar in the two inferior lines; because on the accuracy of that recognition entirely depends the exactness of the operation.

§ 61. *Examination of the foregoing Example.*

Guided by the numbers as by the hand, the reader has undoubtedly written in music the counter-motive with facility and correctness. He has, therefore, clearly seen in the *first bar*, that, since the counter-motive sings *Do*, 1; *Re*, 2; *Mi*, 3; *Do*, 1; and the motive of the whole measure is *Do*, 1; there is in it no dissonant sound, except the *Re*, 2, which is not a cadencial sound.

In the *second bar* there is no other passing note than the *La*, 6, which is not a sound of the precadence.

In the *third bar* there is no more passing note than the *Si*, 7, which does not belong to the cadence. In the *fourth bar* we have two passing notes in the two weak strikes; the first is the *Mi*, 2, and the *second* is the *Do* natural, which, as a sound foreign to the scale of *Re*, has no number in it; on which account we have placed at its side both a nought and an asterisk. We shall observe, in this measure, the chord is the cadence of *Re* natural; and nevertheless the *Do* natural * suits it very well, because all the notes of the example belong to the gamut of the key of *Do* natural, which is the one that is imperiously predominant in the ear. This fact ought to be kept by the student as a rule, that teaches him that to no passing note can be applied any accident foreign to the key in which the melody is written; though the chord be made of notes forming the cadence of another key. In this bar, consequently, though the chord is the cadence of *Re* (*Re*, 1; *Fa*, 3; *La*, 5), the reigning key is always that of *Do*, as we shall see again in the sixth measures.

In the *fifth bar* there is no passing notes; because all the four are the notes of the precadence; viz. *Si*, 7; *Re*, 2; *Sol*, 5; and *Fa*, 4.

In the *sixth bar*, which presents the cadence of *La* natural, there is no more passing note than the *Re*, 4, which does not belong to that cadence. Though the chord of this bar be the cadence of

La natural, the reigning key in this composition does not cease to be that of *Do* natural, which cannot be changed unless an accident foreign to its gamut be introduced; which observation we have already made in the fourth measure. In the *seventh bar* there is no other passing note than the *La*, 6, which is not precadencial. Finally, in the *eighth bar* there is no more passing note than the *Re*, 2, as in the first measure.

The verbal explanation of this example at the board is so very simple, that it does not last upwards of five minutes, and still it leaves the pupil advanced in useful information; confirmed in the doctrine; and it enables him never to fall henceforth into error, nor even into doubt. Let us proceed.

CHAPTER XVIII.

EXCHANGE OF PARTS—ALTERNATION.

§ 62. We have stated that the *motive* can be placed at the treble; and then the *counter-motive* can be made at the bass. This we are now going to do; and in order to procure our reader at once more entertainment and instruction, we shall cut off and distribute the motive, alternating it from bar to bar between the treble and the bass, so that the *counter-motive* will become alternated in the same way.

Let the *motive* be the same as in the foregoing example, and let us divide it in the following manner:

We choose again the key of *Do* natural major. The motive will be *Do*, 1; *Re*, 2; *Mi*, 3; *Fa*, 4; *Sol*, 5; *La*, 6; *Sol*, 5; *Do*, 1.

Treble.....	Counter-motive.	Motive.	Counter-motive.
	1, 2*, 3, 1.	1.	7, 1*, 2, 7.
	.....	.....	.....
	1	3, 5, 3, 1.	5.
Bass.....	Motive.	Counter-motive.	Motive.
	.....	.....	.....
Chords....	C.	C.	P.

Treble.....	Counter-motive.	Motive.	Counter-motive.
	1, 2*, 3, 5.	4.	3, 5, 3, 7.
	.....	.....	.....
	3.	4, 3*, 4, 6.	5.
Bass.....	Motive.	Counter-motive.	Motive.
	.....	.....	.....
Chords....	C.	T.	P.

Treble.....	Counter-motive.	Motive.	Counter-motive.
	1, 2*, 3, 1, 7*.	6.	7, 1*, 2, 7.
	.....	.....	.....
	5.	4, 6, 5*, 4.	5.
Bass.....	Motive.	Counter-motive.	Motive.
	.....	.....	.....
Chords....	C.	T.	P.

Treble.....	Counter-motive.	Motive.	Counter-motive.
	1, 2*, 3, 1.	2	1, 3, 5, 7.
	.....	.....	.....
	1	7, 6*, 7, 5.	5.
Bass.....	Motive.	Counter-motive.	Motive.
	.....	.....	.....
Chords....	C.	C.	P.

Treble.....	Counter-motive.	Motive.	Counter-motive.
	1, 2*, 3, 1.	1.	3, 5, 3, 1.
	.....	.....	.....
	1	3, 5, 3, 1.	5.
Bass.....	Motive.	Counter-motive.	Motive.
	.....	.....	.....
Chords....	C.	C.	P.

Whilst our reader will be writing this example in music, he will explain it to himself with as much accuracy as facility; and he

will, afterwards, compose others of his own invention, to convince both his master and himself that he had perfectly understood the simple mechanism of this operation, which is so intimately connected with rules hitherto stated, and of course well known.

To this example, as to all others, the student will add the harmonic complement; viz. the two interior parts, the tenor and the counter-tenor. By fitting them with the numbers of the *motive*, they will not be less in harmony with those of the *counter-motive*.

§ 63. *Commuted Notes.*

The sixth bar of this example gives rise to an observation which is so much the more curious that it raises at once for our reader a doubt which, otherwise, would perhaps stand often in this way.

It not unfrequently occurs that in a series of notes placed by conjunct degrees, viz. according to the natural order of the scale, the musical student finds himself perplexed about deciding which is the passing note, which the harmonic one; because they do sometimes usurp one another's place, in which case the school gives to them the name of *commuted notes*. That case we have presented in the sixth measure. And indeed, let us observe that, in its second half, the first note (Sol, 5*) is the dissonant one, and the second sound (*Fa*, 4) the consonant note; so that the result of this commutation is that the passing note *Sol*, 5, is in the accented part of time, and the harmonic, or typometrical note Fa, 4, in the unaccented part, which is contrary to what is natural, right, and usual—to that which takes place in the other bars. And how will our pupil be able to ascertain whether or not that *Sol*, 5, is the true passing note, whether or not he can put it at the first strike of the time? *Answer*. On reflecting that of two sounds in conjunct degree (as, for instance, those of *Sol* and *Fa*), one only can be consonant; that the *Fa* is consonant; that the *Sol* is preceded by the *La*, also a consonant sound; that any note intercalated between two consonant ones is necessarily a dissonant and passing note; our reader will unhesitatingly declare that *Sol* to be a passing and dissonant note. If he afterwards asks us why such an attack against the rule is tolerated, permitted even; we shall reply that it is so by the same reason which permitted Shakespeare to write with four synalephas the first line of his tragedy of *Julius Cæsar*;

"Hence! home, you idle creatures, get you home;"

and which permits all British poets to use them so repeatedly in their poetry, that there is scarcely an English poetical line without

a couple of them at least. Well! the dissonant *Sol* at the thesis, followed by, or rather tied to, the consonant *Fa* at the arsis, in the second half of the bar sixth in question, is nothing else than a musical synæresis, or synalepha, in which two sounds, just the same as two vowels or even two syllables in the various poetical crasis alluded to, are melted only into one, under one sole accent, which destroys the duration of the other. In music, dissonant notes are in the same way swallowed and destroyed for harmonic quantity. From this truth arises the immense advantage of cancelling, through the Geneuphonic theory, all the definitions of those numberless musical synalephas and crasis which have hitherto been taught us, and held for so many chords, whilst they are in reality nothing more than momentary discords which the composer feels in his path, and finds to have vanished as soon as he looks at them. Where is the use, therefore, of calling them by their names and surnames to a concurrence by opposition? Poor Shakespeare! luckless British poets! unhappy all, had ye laboured under the necessity of studying eight or ten years the thousand names (should they have been invented) of as many sorts of crasis, synalephas, or synæresis, to be able to dispose the arrangements of the vowels and syllables which you have elided in the rhythmical stream of your poetical fancy—to be able to render ye immortal by the strokes of your soaring genius, or the sweet strain of your enraptured or doleful muse!!

CHAPTER XIX.

COUNTERPOINT OF TWO NOTES AGAINST ONE, WITH SYNCOPES.

§ 64. We are certainly now acquainted with the use and the value of the momentary dissonances called *passing notes*. Let us then pass to the fourth kind of *Counterpoint*, named *of two notes against one with syncopes**. All its artifice consists in prolonging in the *counter-motive* the second note of the bar, making it become

* *Syncope*, *ligature*, *prolongation*, is the continuation of a sound from one bar to the other: if that sound is consonant, or harmonical, or *typometrical* in both bars, or in both parts of time of the two bars in which it is heard, the syncope, ligature, or prolongation, is *without retardation*: if, on the contrary,

first note of the following measure. The reader has seen, in the solfeggio, that those notes which have one half of their value in one part of time, and the other half in the following part of time, are called *syncoped*. It is clear that the first half of the note tied or *syncoped* ought not to be dissonant, as passing notes are ; but the second half may be either dissonant or consonant, which is to be determined in conformity with the note of the *Motive*. The result is, in one word, that the second half of the bar is always consonant, whether the first is so or not. This, when seen in music, is very simple. Let then the reader write on the stave the same bass of the preceding examples, viz. *Do, Re, Mi ,Fa, Sol, La, Sol, Do*. Let him compose upon this bass or *Motive* a treble or *Counter-motive* of two notes per bar, taking care that the second of these two notes be also consonant or typometrical with the bass. He will assuredly find several modes of doing so : we present him with one of them for a guide in the following sketch, which he is requested to write in music gradually as he reads it on the spot. We shall give him afterwards its analysis, in order to complete his understanding of the matter, and his conviction.

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the prolonged sound is not consonant in the part of time of the second bar in which it is heard, the syncope is *with retardation*. The *syncope* ought not to be confounded with the *syncopation*, which is a longer note between two shorter ones in the same bar, for the purpose of effecting it in a counter-time ; as stated in Elements, Chap. II, 10, p. 8.

Example.

		Ligature, or Syncope.		Ligature, or Syncope.		Ligature, or Syncope.		Ligature, or Syncope.		Ligature, or Syncope.		Ligature, or Syncope.		Ligature, or Syncope.		
Treble. *Counter-motive*...	–	Mi	Mi,	Re	Re,	Do	Do,	Fa	Fa,	Mi	Mi,	Do	Do,	Si	Si,	Sol
	0	3	3 *	2	2 *	1	1	4	4 *	3	5	3	1 *	7	7 *	5
		1	2	3	4	5	1	5	1							
Bass. *Motive*.....		Do	Re	Mi	Fa	Sol	La	Sol	Do							
Chords result..		C	P	C	T	C	C	P	C							
Keys.....		Do♮	Do♮	Do♮	Do♮	Do♮	La♮	Do♮	Do♮							

Analysis of the foregoing Example.

§ 65. First Bar.—As no piece of music ought to begin with a dissonance, we have put at the treble a minim-rest in the first half of this bar: the second half bears the consonant *Mi*, which is syncoped on the first half of the following bar.

Second Bar.—The *Mi* which has just been syncoped becomes dissonant with the *Re* of the bass in the first half, and falls, in the second half, into the consonance of octave with the bass. This is what is called "*to resolve the dissonance*," which, by general rule, is performed by lowering the dissonant note one degree; and that is what has been effected in the descent of *Mi* to the *Re*.

Third Bar.—The same has been done as in the second bar; *i. e.* to lower the syncoped *Re* of the treble one degree to the *Do*, which is consonant with the *Mi* of the bass.

Fourth Bar.—As the *Do* which has been syncoped is not dissonant with the *Fa* of the bass, there has not been the necessity of *resolving* it by lowering it one degree, as dissonances are *resolved*. The melody, for that reason, has leaped to the *Fa*, a consonant note, to syncope it, by causing dissonance in the first half of the following bar.

Fifth Bar.—The *Fa* which has been syncoped is *resolved* as dissonant, by descending to the *Mi* consonant. This *Fa* 4 against the *Sol* 5 of the bass, presents that *only dissonance of the Typometer* which is found in the *Precadence;* consequently there are in this bar two chords in reality, instead of one; viz. *Precadence* and *Cadence:* but as it is proposed to have but one chord per bar in this counterpoint, we ought to consider, that in this there is only the *Cadence*, and in this last, in fact, the *Fa* 4 is dissonant.

Sixth Bar.—In this bar the note *Mi*, which comes syncoped from the anterior bar, is not dissonant with the *La* of the bass; consequently there was no need of *resolving* it, by lowering it one degree. We have been thus at liberty to make the intonation of the *Mi* to the *Do*, to which we pass in order to syncope it afterwards. In this bar are found the notes *La*, *Do*, *Mi*, which are 1, 3, 5, in the gamut of *La*, and consequently give the *Cadence* of *La* for the chord of the entire bar.

Seventh Bar.—Conformably with the reason already given, " that we consider only one chord per bar," we regard as dissonant in this the *Do*, which comes syncoped upon the *Sol;* because the *Do* 1 is the note of the *Cadence*, and not of the *Precadence*, which is the chord of the bar.

Eighth Bar.—The *Si* 7, which comes syncoped upon the *Do*, is dissonant, and we resolve it upon the *Sol* by descending two degrees; because, if we operated the resolution on the *La* by only lowering it one degree, the result would be, that the example would not terminate, as it ought to do, in the *Cadence* of *Do*, in which it has commenced. Another resolution (and this is the true one) may be given to this *Si* 7, by making it ascend half a degree, namely, to the *Do* 1 octave; because the tendency of every dissonance to resolve itself, is to make as little way as possible, and the *Do* is much nearer the *Si* than the *Sol*.

We shall treat this subject more profoundly when we treat exclusively of dissonances. We spoke sufficiently of it on the subject of the syncoped counterpoint of two notes against one, which is the fourth species of counterpoint.

CHAPTER XX.

THE DIALOGUE.

§ 66. The following exercise in counterpoint was composed by a pupil of the Geneuphony, after he had, during three weeks, carefully perused the twenty preceding chapters several times, one of which with the assistance of an able professor of harmony. The Dialogue here literally transcribed took place between the Master and the Pupil, while the former made the latter write the harmonization, which we shall subjoin at the end of their interesting conversation.

Master. I shall give you a song in a few bars, which you are to harmonize as a quartett. The conditions I impose upon you are, that in the first place you employ no *alterative sign;* in the second, that you put in the bass four notes per bar; lastly, that in the penultimate bar you mind the *cadence* of *Do*, with which the song concludes. Have you any remark to make to me on these conditions?

Pupil. With r espect to the first condition, I beg leave to observe, that, as I cannot use *alterative signs* in the harmonization, I can only employ *cadences* without the alternative of *precadences*, because the latter always includes an *alterative sign*, the key of *Do* alone excepted.

Master. Perfectly right.

Pupil. I therefore hope, sir, that you will put none into your part of the song.

Master. You are right, I shall put none.

Pupil. Then begin, sir, as soon as you please.

Master. I give you a *Do*, which I write in the key of *Sol* in the upper stave. I mark for you in the key the binary movement.

Pupil. Consequently, sir, I shall consider your single note as divided into two.

Master. Exactly so.

Pupil. Beginning then by the bass, I shall rhythm it in two harmonical sonorities per bar; and as I must put two notes to each part of time in the bass, I am clearly at liberty to make one of them either *euphonic* or *cacophonic;* i. e. belonging or not belonging to the *cadence* which I have to employ in each part of time. I therefore place in the bass against the *Do* you have given me for the first bar these four notes, *Do, Re, Mi, Do*, over which I place the numbers 1, 2, 3, 1.

Master. Well done; but give me your reasons for doing so.

Pupil. I have considered your *Do* of the melody as note 1 in the two parts of time of the bar, in order to imprint the better on the *ear* the sentiment of the tonic with which you required I should begin and end this counterpoint. I could have left out the key of *Do* in the last half of the bar, and substituted by another bass the key of *Fa*, or that of *La*, or any other; but I preferred prolonging that of *Do*, in order to set out with that simplicity which your favourite Horace recommends.

Master. Bravo! Bravo!

Pupil. As to the *Re*, I have chosen it for a passing note, because it conducts me to the *Mi*, to which I am going. I prefer it to every other note, because it is the nearest to the *Do*, which I leave, and to the *Mi*, to which I am going. I place then over *Re* its number 2, surmounted by the cacophonic sign (*), to shew that it does not belong to the chord of the first part of time, which is the *cadence* of *Do*, because the 2 in all gamuts is a *precadencial* note. As to the *Mi*, first note of the second part of time, I have

taken it, because as I was obliged to employ one of the three notes of the *cadence* of *Do;* it was the only one that offered me no inconvenience. In fact, the *Do* would be a repetition of the *Do* octave, employed in the first part of time, and which I propose introducing only into the last fourth of the bar; whilst the *Sol* would produce in the bass a *precadencial* movement, which is not in the song *Do.* In short, as to the *Do* in the last fourth of the bar, I placed it there as a *harmonic*, and not as a *passing note;* thus the two notes of that half of the bar naturally bear the numbers 3 and 1.

Master. In truth, it is by no means objectionable; but tell me, could you have done it in another manner?

Pupil. Of course, sir, I could do it otherwise. Behold first eight notes, *Do, Si, Do, Re, Mi, Re, Mi, Do;* then six notes, *Do, Sol, Fa, Mi, Re, Do.*

Master. That is really very well; but tell me in a few words your reasons for preferring the 5 to the 3? Do you experience more pleasure from the sound of the fifth than from that of the third?

Pupil. Far from it, sir; but I precisely keep the third, in order to make it shine the more in a melody or part which I have yet to compose.

Master. Bravo, my young friend!

Pupil. Since you are so kind as to encourage me, will you permit me to observe, that I could not determine at pleasure the second note of the tenor in this first bar, unless you previously let me know the song-note for the following bar, as it is according to the note in which I harmonize your song, that I am to chose the movements of my tenor.

Master. In conformity with your observation, which is correct, I write you a *Fa* for my song of the second bar.

Pupil. Therefore, sir, as I shall put a *Re* to the bass, in order to have a fine minor third against your *Fa;* the numbers 1 and 3 are necessarily those I shall give to this *Re* and this *Fa*, for the purpose of procuring for my tenor a *La* with its number 5, and thus obtaining the *cadence* of *Re;* then it seems clear to me that, as the bass and your song ascended, my tenor ought to descend, instead of ascending, to find its *La.* To arrive at this, I can make it pass by the *Mi*, or by the *Do*, which are the two notes of my *cadence* of *Do*, of which I have the choice in this bar; but I prefer the *Do.*

Master. Wherefore, if you please?

Pupil. Because it is nearer to the *La*, and because I have reserved the *Mi* for the other melody, which I have still to make. Thus, then, in the two notes of the first bar, there are for my tenor a *Sol* 5 and a *Do* 1, and for the first half of the second bar it is a *La* 5 of the key of *Re*.

Master. This is really good. Let us proceed; but I must inform you that I require of you, when you compose the melody still to be written, you should syncope your note of the first bar upon the first half of the second bar.

Pupil. I am willing to do it, sir; but have the kindness to allow me, in doing this, to make the syncope cacophonic; for, in the *cadence* of *Do*, there is no note which is common to the *cadence* of *Re*, so that the syncoped note can only be *euphonic* in one of the two *cadences;* shall I therefore operate the cacophony upon that of *Do*, or that of *Re?*

Master. I prefer you to do it on that of *Re*.

Pupil. It shall then be a *Mi* that I shall number note 3 of the key of *Do* in the counter-tenor of the first bar, and note 2 of that of *Re*, in the striking of the second bar.

Master. Had you operated the cacophony upon the *cadence* of *Do*, what note would you have chosen instead of the euphonic *Mi* which you have just taken?

Pupil. As the interval, essentially cacophonic, dissonant, and, in a word, *precadencial*, is that of second (as well as that of seventh), in the same manner that, in order to operate the cacophony upon the *cadence* of *Re*, I have taken the *Mi* which is the second to the key-note of *Re*, as it is the most *euphonic* interval of the key of *Do;* had I wished to operate the cacophony upon the *cadence* of *Do*, I should have placed in this bar a *Re*, which is the note 2 in that scale, whilst it is at the same time the tonic of that with which the following bar begins. But, in this case, in order not to lose my third in this first bar, I should have left my *Mi* in the counter-tenor, where, as I have already said, it produces a better effect, and I should have so arranged as to introduce the cacophonic *Re* in the tenor, having due care, instead of the considerations I have just deduced, to attend to those which this different disposition of the notes of my harmonization would have suggested to me. Would you have the kindness, sir, now to give me the melody of the third bar before I compose my harmonization of the second, to enable me to adjust the movements of my three parts?

Master. It is right; here is a *Mi* for the melody of the third bar.

Pupil. Now I perfectly comprehend: you make me revert to the *cadence* of *Do*, which alone can be preceded by its *precadence*, without introducing an alterative sign. Your *Fa* of the second bar is placed there very opportunely. I had put to this *Fa* a 3 for the first half, and now I give it a 4 for the second, by which every thing will be soon done. I therefore write down for the bass of

1 7* 7 5

the second bar, *Re, Do, Si, Sol.*

Master. Give me the reasons for your determination.

Pupil. Here they are:—The sonority of the first half, being the *cadence* of *Re*, this *Re* is its tonic, or note 1. The sonority, which I shall put in the second half, being the *precadence* of *Do*, I should clearly make my bass move towards a note of this *precadence*, and endeavour that this note should be the nearest possible to the *Re*. I find, at equal distance from it, both the *Fa* and the *Si;* but I prefer the *Si*, because the *Fa* is already in your melody. Consequently, I write the *Si*, and say—that I have no other note to place between my *Re* and my *Si* but the note *Do*, for the *passing note;* and I write *Do* for the second note of the first half, as you see. To this note *Do*, which is not a note of the gamut of *Re*, I attach the *cacophonic* sign (*). Have I not done right?

Master. In fact, better than you imagine.

Pupil. Pardon me, sir; I could give another reason.

Master. Have the kindness to state it.

Pupil. I say, sir, that this *Do* is here almost *euphonic.*

Master. How is that?

Pupil. Because it is *precadencial* note 4 in the key of *Sol*, towards which it marches.

Master. But you have told me this instant that its march was towards the *precadence* of *Do.*

Pupil. Certainly I have said so, sir; and my reason is this: that the *cadence* of *Sol* is the *precadence* of *Do.* And you must moreover observe, that for the fourth note of my bass I have taken the *Sol*, the only note besides which I could select, because it is the fundamental bass of the *precadence* of *Do* (in which I find myself in this second half of the second bar); at the same time it is the tonic of the key of *Sol*, the *cadence* of which is precisely, all but one note, the *precadence* by which I am governed.

Master. Very well: proceed.

Pupil. Behold, I write for the tenor, at the second bar, the notes *La, Si;* the *La* as note 5 of the key of *Re*, and the *Si* as note 7 of the key of *Do.*

Master. This is right as to the *La,* as has been stated already; but you have the *Si* already in the bass.

Pupil. Yes, sir; but the bass has quitted it, in order to pronounce the *Sol 5,* which, as I have said before, is the fundamental note of the *precadence* of *Do,* being the tonic of its own gamut of *Sol;* and I was anxious that the *Si* should not fail me in the last *fourth* of the bar, in order to have the complete *precadence* of *Sol, Si, Re, Fa,*—5, 7, 2, 4. You are well aware, sir, that I mean to give the *Re* to my third melody, and that, for the first half of this bar, I must give to this same melody the *Mi* which constitutes the syncope you have enjoined me to make in the accented parts of all the bars. This *Mi,* being note 2 of that of *Re,* bears the number 2, with its cacophonic sign (*); because it is not the *cadencial* note of *Re,* and that afterwards the *Re* bears the number 2, as *precadencial* note of *Do.* Behold my work finished for the second bar.

Master. This is very well; but before we proceed, I shall ask you a question which I forgot to put at the commencement of this exercise. Why have you not asked in what key I was to compose my melody?

Pupil. It is because I had no doubt whatever on the subject, as soon as I saw that I could not employ *alterative signs.* Had the melody been in *La,* I should have needed the *Sol* sharp; and, had it been in *Fa,* the *Si* flat, &c. &c.

Master. Proceed to the harmonization of the third and fourth bars. I give you *Mi* for the former, and *La* for the latter.

Pupil. With respect to the bass, I give it the same notes as in the first bar, because we revert to the *cadence* of *Do,* as we have announced by its *precadence.* We have then for the bass of the third bar *Do, Re, Mi, Do;* and, as you have given me a *La* for the melody of the fourth bar, I place a *Fa,* in the bass of that fourth bar, in order to establish the *cadence* of *Fa,* of which that of *Do* has served me for the imperfect *precadence.* I afterwards give to the tenor for the third bar, *Sol* and *Sol octave,* both of them bearing number 5; and I must give it for the accented part of the fourth bar a *Fa,* which makes with the melody and the bass a contrary movement. For the other melody in the third bar, I have only to syncope the *Re* in the accented part, by marking it with a 2 with the *cacophonic* sign (*), because it is not a sound of the cadence of *Do,* and I make it pass to the *Do* in the raising of the hand, giving to this *Do* the number 1, which belongs to it in the *cadence* of *Do.*

As to the accented part of the fourth bar, I have no choice to make, having your commands to make a syncope, in consequence of which I have syncoped my *Do*, and thus have finished my task for the third bar and the accented part of the fourth.

Master. It is very well done; but as I have given you a *La* for the melody of the fourth bar, and the *La* being a *cadencial* note in the key of *La*, and in that of *Re*, as well as in that of *Fa*, pray tell me your reason for preferring the *cadence* of *Fa* to the two others.

Pupil. With respect to the *cadence* of *Re*, my reason for not adopting it was to avoid the repetition of that which I had done at the bass in the second bar, and moreover, the syncope of the *Do* being opposed to it, as I could neither descend to the *Si*, which is not *cadencial* of *Re*, nor ascend to the Re, without the result being a complete repetition of the second bar. As to the *cadence* of *La*, I have no other reason for rejecting it, but my decided inclination to prefer, in every case, the movement of *precadences* and *cadences* alternately in the melodies; and this is the cause that, finding in the third bar the *precadence* of *Fa* in three of its notes, *Do*, *Mi*, *Sol* (*cadence* of *Do*), I have, without hesitation, caused it to be followed by the *cadence* of *Fa*. However, I shall change it, if you wish me to do so.

Master. Do not alter it on any account, because it is well, very well done as it is. The reasons you have given me are excellent; besides, you will probably have occasion soon to employ your *cadence* of *La*. Let us proceed. Here is a *Sol* for the melody of the fifth bar.

Pupil. This being the case, I am no longer embarrassed, and I hasten to place at my counter-tenor, for the second half of the fourth bar, a *Re*, which I shall cause to syncope, in the first part of the following bar, upon the *cadence* of *Sol*, with which it begins and with which my *Re* is consonant. Now look at my *Re;* I write it down even before I compose my bass, and I mark it in the arsis as number 1, and in the thesis as 5; then I can no longerfall into any error about my bass of the whole of the fourth bar, *Fa*, *Mi*—*Fa*, *Re;* and for the thesis of the fifth bar I put *Sol.* I afterwards give to the tenor in the fourth bar, *Fa*, *La;* and I commence the fifth by *Si*, which will make them the third of your melody and of my bass.

Master. I have observed that when you composed your bass of the fourth bar you introduced into it a sharp, which you afterwards erased as if in spite of yourself. What was this sharp?

Pupil. It was in this arsis of the fourth bar that I wished to modify the *Fa* in the third, or in the last fourth, in order at least that the *cadence* of *Re*, taking the major mode, might give me the *precadence* of *Sol*, to which the harmonization progresses; but recollecting you prohibited to my employing *alterative signs*, my ear led me to expunge this sharp, by which the bar has been left in *Canto Firmo*.

Master. I shall give you now, and before you finish your fifth bar, my melody of the sixth, which is *Mi*.

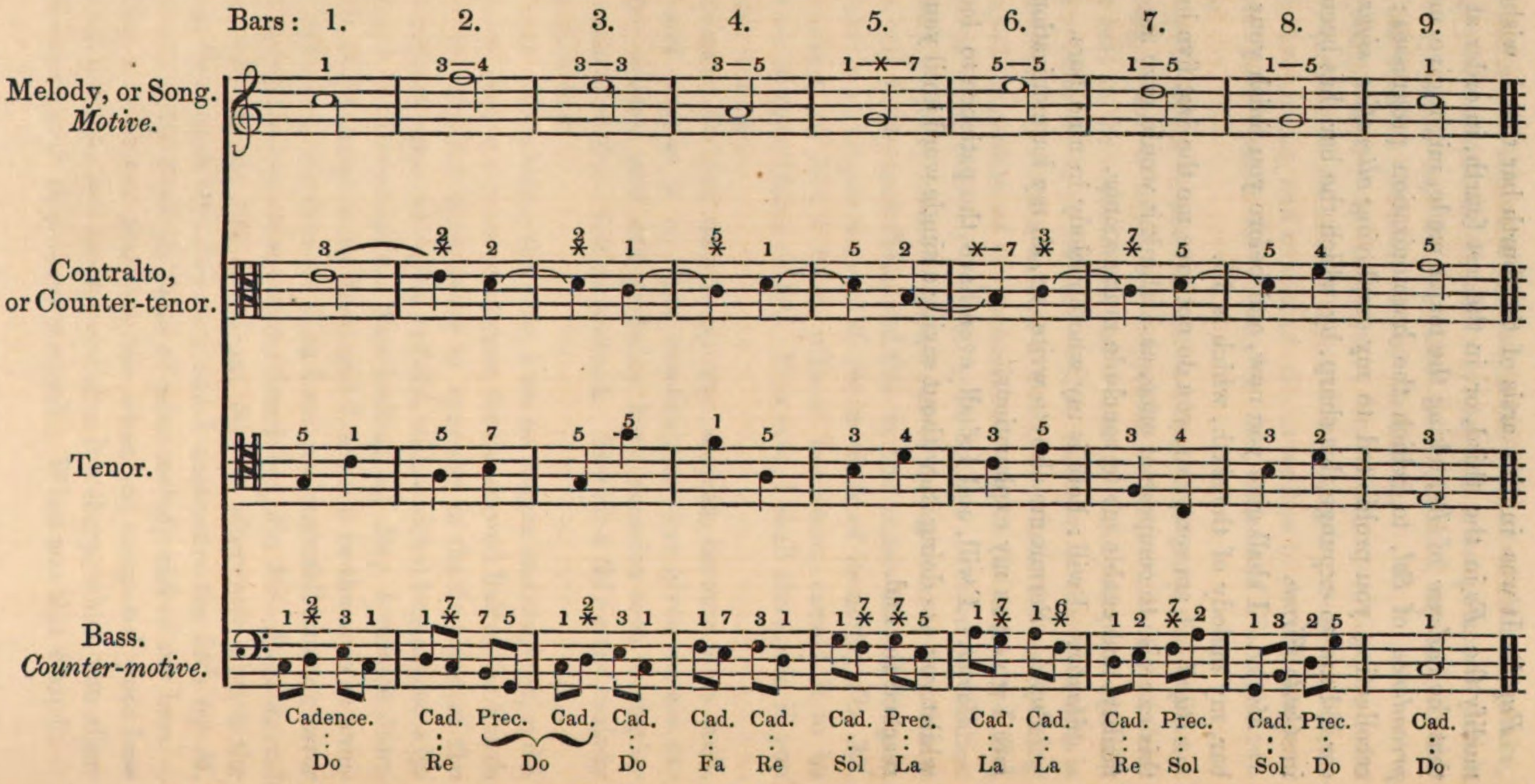
Pupil. I am sorry, sir, you do not give me the last five bars of this exercise to compose at once, as I think it would give me more facility, and enable me to conclude much sooner.

Master. I will: here is my whole melody in nine bars.

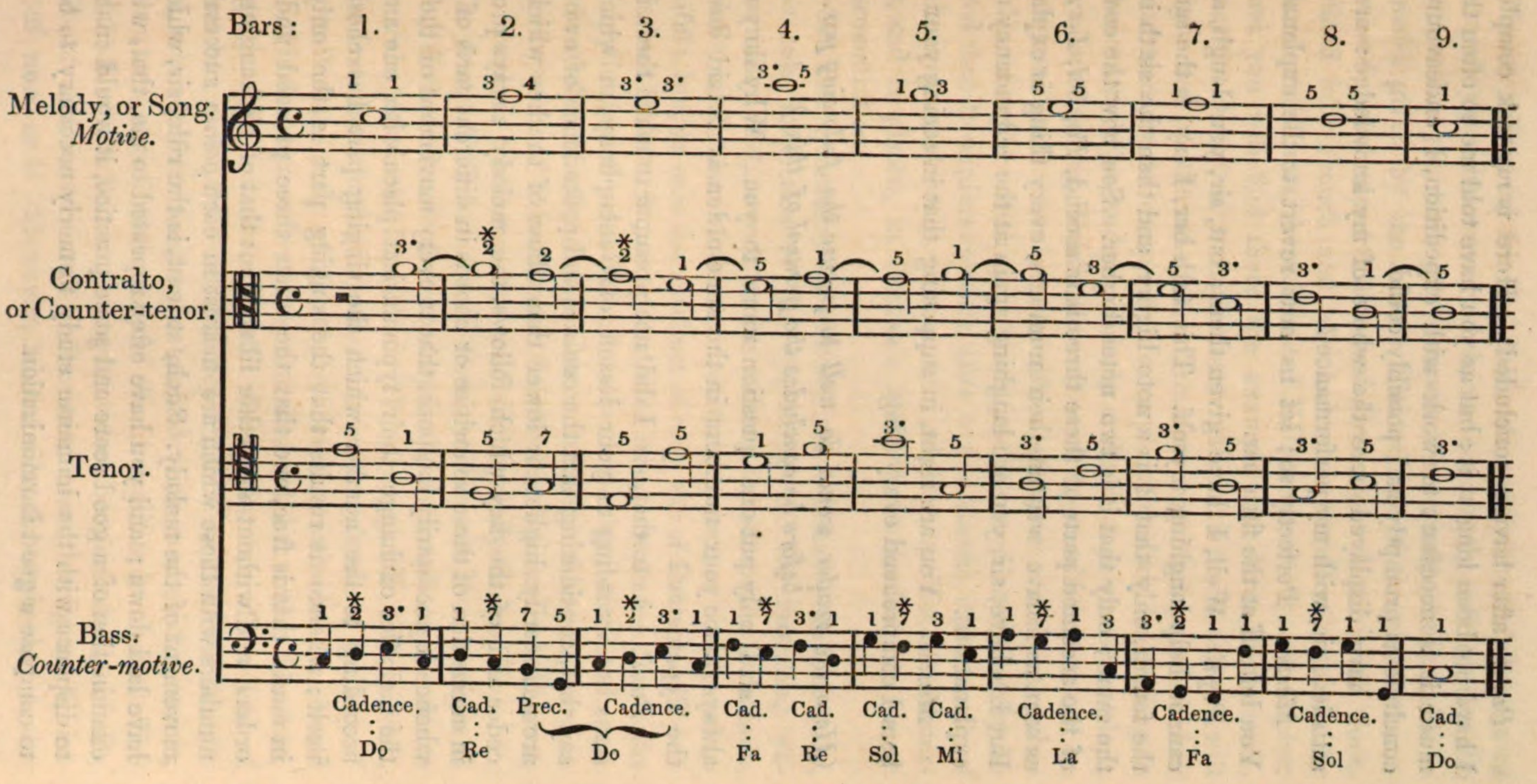
Pupil. Permit me also to write, sir, all my harmonization, before I give you my explanations.

Master. I will, and I shall even have the patience to look on whilst you are doing it, without saying a single word until you have reached the end.

First Example.



Second Example.



Pupil (after having concluded). Here is my task completed: I have not been long at it; but as you have told me so often that in music it is necessary to work with expedition, I endeavoured to conclude as promptly as I possibly could.

I have displayed here the whole of my knowledge: are you satisfied, sir, with my performance?

Master. Perfectly so; let us now revert to the explanations. You left off at the fifth bar.

Pupil. Well, I have given them; but, sir, you laugh, and I cannot help laughing myself. This fifth bar, I say, is the same as the fourth, only that it is a note higher, and then the sixth is also the same; only that it is two notes higher. See how the *cadences* of the accented parts of these three bars ascend, *Fa, Sol, La;* but as soon as I have written their numbers, every thing is explained. But I believe, sir, you are laughing again at the redundancy of my explanations.

Master. You are right, in supposing that in seeing your numbers I comprehend everything.

(*Here the reader would do well to peruse the following par.* § 67, *before he concludes the perusal of this.)*

I shall only put one question more to you. Why do you not always place your numbers in the same order as is laid down by the Typometer?

Pupil. As to that, sir, I did not presume to make these inversions but according to your lesson of Geneuphony, in which you say that, considering that the *cadence* and precadence of every key are necessarily higher or lower than those of the key which precedes and of the key which follows, the melody always proceeds in succession of these sonorities or chords in different parts of time; whence it necessarily happens, that at every movement of the song the melodies exchange their typometrical place with one another, according to the number which the singing part has chosen for itself; whence it results that the singing part is the only one in music that is free, and that the other three proceed under its orders, and without any other liberty but that of exchanging their numbers with those which are nearest in each *gamic* succession or movement of the melody. Such, at least, is the rule, sir, which you have laid down; and you have often repeated to me, that, with the examination of a good score and some practice, it would enable me to dispense with the immense study formerly necessary to be able to compose a good harmonization.

Master. Yes, my friend; this rule, with the few lessons of Geneuphony you have received, has so completely sufficed, that the harmonization you have just composed is entirely conformable to the model given by the famous Richter, one of the greatest composers and most learned theorists of Germany. Here is his work, translated into French and enriched with excellent remarks by another learned man, the celebrated Kalkbrenner; open it at plate 36, and you will find there the example you have just written, without the change of a single note. Read this work, and you will be frightened at the mass of information you must possess before you can venture to compose an example of this kind according to the ancient theories, and particularly at the time you must employ; as there are lessons, Richter himself says, upon which it would be proper you should exercise yourself a whole year. And, nevertheless, this example which you have just guessed at (if I may be allowed thus to express myself), after so few lessons, is the result of all this protracted study, of the fifth and last species of counterpoint, and is placed, in Richter's Method, the last of his theory of harmonization.

§ 67. The generality of our readers will have, undoubtedly, at the sole inspection of the cyphering of the foregoing example, understood, as well as the master, the succession of chords, the whole mechanism of this composition, at once so simple and so beautiful: but, in case the intellect of only one of them should perchance be a little tardy, and not able to recognize at one glance the exact application of rules which he already knows; it will not, perhaps, be useless to offer to him a short summary of the explanation that springs out of this dialogue for the first four-and-a-half bars; and to conclude the instructive analysis begun by the pupil.

Bar first. The cadence of *Do* is the only chord that reigns in it. But as the cadence of every key is the incomplete precadence of the scale built on its 2 (see Rule IV, in Chap. IX, § 44, p. 144), and the first chord in the following bar is the cadence of the key of *Re*, note 2 of the scale of *Do*, the reader may consider the second half of this first bar as precadence of *Re*, and he could, therefore, number the *Mi* third note, and the *Do* fourth note of the bass of the first bar, as 2 and 7 of the key of *Re*. In this case the *Do* should, instead of its number, be marked with an asterisk, because, to belong as a note 7 to the key of *Re*, it ought to be sharp. The second half of the first bar being considered as precadence of *Re*, the *Do* of the tenor should, of course, bear the figure 7, instead of number 1. However, whatever be the cyphering, as the

difference of the numbers creates no alteration in the sounds, the effect, be it cadencial or precadencial, remains totally the same.

Bar second. The first half, of this bar is the cadence of *Re*. To the second half, which intrinsically has the character of the precadence of *Do*, the author has avowedly put the habit of that precadence, by giving to all the notes of the said second half the precadencial numbers, in honour of the key of *Do*, with the cadence of which the third bar begins.

Bar third. The cadence of the key of *Do* reigns in this whole bar; but again, as the author, having a *La* for the melody of the following bar, is at liberty to hold that *La* for note 1 of the key of *La*, or for note 3 of *Fa*, he chooses, and very properly too, the second way; because, in the cadence of *Do*, which governs the third bar, he finds the incomplete precadence of the key of *Fa*, with which, therefore, he occupies this first half of the fourth bar.

Bar fourth. Cadence of *Fa* for the first half; cadence of *Re* for the second. The author chooses this cadence instead of continuing in the whole bar the cyphering of the gamut of *Fa*, because the cadence of *Re* is at the same time the incomplete precadence of the key of *Sol*, the cadence of which follows. (See Rules XI, XII, and XIII, in Chap. IX, § 47, pp. 147, 148.)

Bar fifth. The first half is the cadence of *Sol*. The second half could have been numbered with the figures of the key of *Sol*, or with those of the key of *Mi*, the cadence of which is the incomplete precadence of the key of *La*, which begins the next bar; or with those of the precadence of *Do*, which contains three notes of *La*. (See Rule VI, in Chapter IX, § 44, p. 144.) But the composer has preferred to give at once to the second half of the fifth bar the cyphering of the precadence of *La;* because he then gets numbered the four notes of that precadence, instead of having but three. The *Sol* bears in this second half, both at the treble and the bass, an asterisk at the side of its number 7; because in the key of *La* with sharps (nearer to the key of *Sol*, just left, than the key of *La* with flats) the *Sol* natural is a foreign sound. To become note 7 of the key of *La*, it ought to be sharpened.

Bar sixth. The first half of this measure is filled up by the cadence of the key of *La*, and the cadence of *La* is an incomplete precadence of the key of *Re;* the composer has kept up the cyphering of the cadence of *La*, which he has done with the aim of not altering the cadencial form of the note *Mi* of the tune in this sixth bar, which is the first of the answer to the query made in the five preceding measures. Indeed, the four last bars are, in reality,

the second part, the complement of the melody of which the five first bars may be considered as the first part, as the initiating motive. The *Fa* with which the bass of this bar ends, bears an asterisk at the side of its number 6 of the scale of *La*, because in that scale it ought to be sharp. For the same reason, in the contralto of the same and the following bar, asterisks are attached to the notes *Do*, at the side of number 3 in the former, and number 7 in the latter.

Bar seventh. The first half is the cadence of *Re*, just the same as in the second bar. And just the same also as in the said bar, the second half is the precadence of *Do ;* the second half in this seventh bar is likewise numbered as the precadence of the key of *Sol*, with the cadence of which the following bar commences.

Bar eighth. In this measure the author had no choice. The cadence of *Re*, which rules the seventh bar, being also the incomplete precadence of the key of *Sol*, it was necessary that the cadence *Sol* should govern the first half of bar eight; and as the melody or song begins with the cadence of *Do*, with the cadence of *Do* it must end. It was, therefore, indispensable that the precadence of *Do* should fill up the second half of the measure which precedes the last; and that is precisely what has taken place.

We beg our reader to observe, that, in the four first measures of the contralto, or counter-tenor, the note that is syncoped from bar to bar, consonant or typometrical in the arsis of the preceding, and dissonant in the thesis of the following one, finds its dissonance resolved in the same bar, by falling on the note next to it in its own gamut, either above or below: but in the fifth and the eighth measure, the first note needs not to be followed by the immediate sound in ascending or descending; because that first note, which is *Re* in the two bars alluded to, being consonant in the cadence of the key of *Sol*, with which those two bars commence, creates in that cadence no dissonance to be immediately resolved. The first note of the contralto could, therefore, in bar fifth and bar eighth, be lawfully followed by any note of the reigning key, provided the syncope ordered to be made from bar to bar should not be interrupted. In this case, however, the most proper interval to be chosen is that of third, major or minor, above or below: and so, in bar fifth, the *Re* is followed by a *Si*, ~~major~~ minor third below; and in bar eighth, it is followed by *Fa*, minor third above. The syncope could not take place from bar eighth to bar ninth by placing for the second note in the former one of the two sounds next to *Re*, viz. *Do* or *Mi*, because the one or the other arriving at the contralto in the ninth bar, would have upset the natural order of the

cadence, 1—3—5—1, which in the final chord is always preferable to any inversion. The syncope from bar eighth to bar ninth could, therefore, have been effected only by giving a *Sol* for the second note to bar eight; but the composer has preferred stopping at bar eight (the last but one) the series of ligatures, to leaping the skip from *Re* to *Sol*, though it would not have been a fault; and he had, moreover, another reason for adopting the course he has chosen. Look how, in the eighth measure, whilst both at the treble and the bass the *Sol* is falling by absolute cadence upon the tonic *Do*, the first note of the tenor, *Si*, gently walks through a minor third to the *Re*, which ascends to the *Mi* of the final chord, whilst, in the same measure of the counter-tenor, its first note *Re* not less softly goes through another minor third to the *Fa*, which, by a movement quite similar to the one made by the *Re* in the tenor, ascends also and simultaneously to the *Sol* of the final cadence.

We do finally request our benevolent reader, to whom this chapter will be, we hope, of no small service, to observe that, of the nine bars of this quartett, four contain only one cadence; viz. the first, the third, the sixth, and the ninth; one bar, the fourth, contains two cadences; and the four remaining measures, i. e. the second, the fifth, the seventh, and the eighth, contain both cadence and precadence.

§ 68. Our reader will observe, that in pp. 188 and 189 we have printed the same quartett twice. Our reason for doing so is, that this example of the fifth species of counterpoint was composed in our presence by two musical students, both pupils of the Geneuphony: by a young Spaniard at the Royal Conservatory of Madrid, and by an English gentleman in our house in London. The Spanish pupil did his work exactly as the dialogue relates. The English one wrote his composition after having attentively perused three or four times the manuscript of this dialogue.

The dialogue, which has now become § 66 of the present chapter, was placed in the English student's hand without any musical example, and he felt himself strong enough to entirely write it from the explanation of four bars and a half only, and almost without his master's assistance. We have stated, at the end of § 66, that of the two examples the one is identical, note for note, with the quartett written by Richter: but we shall not say whether it be the English or the Spanish composition, whether it be No. 1 or No. 2, whether it be the example which is or is not analyzed in this chapter. Let masters say to their pupils which they like best, and apply,

if they please, to Richter's work to know which is and which is not his original composition.

In both examples the harmonic matter is entirely the same. In the fourth and the fifth bars the notes of the melody are the same, but at different octaves. At bar seventh, one of the composers has chosen a *Fa*, the other has chosen a *Re*, for the melody, viz. two sounds equally belonging to the cadence of *Re*. At bar eight, the one selected a *Sol*, the other has preferred a *Re*, two notes equally belonging to the precadence of *Do*. As to harmonization, the two quartetts are identical in the first four bars and a half; but in the second half of the fifth bar, one of the composers employed the precadence of *La*, the other the cadence of *Mi*: in bar sixth, the two harmonists make use of the cadence of *La*; in bar seventh, the one presents the cadence of *Fa* only, whilst the other successively presents in it both the cadence of *Re* and the precadence of *Sol*. Now in the eighth bar we see, in the one example, no more than the cadence of *Sol*; in the other, both the cadence of *Sol* and the precadence of *Do*. But let us observe that those differences are chiefly in the cyphering; we repeat that the harmonic matter stands the same in both examples of the same quartett; that is to say, that the one of the composers whose work has not been quite identical with Richter's quartett, has nevertheless harmonized the same notes of the melody with respectively the same sounds, although differently distributed between the bass, the tenor, and the contralto. Then the trifling differences which may be noticed between the two examples do not lie in the products of the science of the harmonist, but merely in the taste of the composers. What an astonishing similarity! what an irrefutable proof that the Geneuphonic theory produces all the possible homogeneousness of results among its followers; and leads by the shortest way to the same musical knowledge that was acquired—to the same products which were brought forth by the theories which, previous to its discovery, were succesively crowned, reigning, and dethroned! One of the composers interrupted at the seventh bar the series of ligatures in the counter-tenor. The other did not conclude it but in the eighth measure.. The former wrote his tenor in the clef of *Do*, third line, and his contralto in the clef of *Do*, first line. The latter more properly wrote his tenor in the clef of *Do*, fourth line; and his contralto in the clef of *Do*, third line.—See Elements, Chap. I, § 4, page 2.

We strongly recommend to our readers to write, from the beginning of the fifth bar to the end of the quartett, the analysis of

the example which has not been specially the subject of the analysis given in this chapter.

§ 69. Exercised as the reader is now in the mechanism of different kinds of counterpoint by the study of this chapter and the preceding ones, as well as by the composition of the intermediate parts of all the examples in which we have left them out, he will now do well to devote a day or two to the examination and recapitulation of all that our book has taught him up to this point. We also advise him to compose as many examples of his own invention as we have presented to him in this section of counterpoint, and in such manner as that one of his may replace one of ours. After this work, which he must take care to submit to the correction or at least approbation of his master, he may pass to the following chapter. We again recommend him, as soon as he has composed an example, to get it executed by four instruments, or, in their stead, by four voices, agreeing well together, and perfectly just in their intonations.

CHAPTER XXI.

DISSONANCES.

§ 70. In the counterpoint *syncoped by two notes against one*, we had no other resource but to employ the word *resolve*, on the subject of dissonances, which we treated there by anticipation, and in an incomplete manner. It is now time to give the reader a perfect knowledge of the use of the dissonances. Every note which is introduced into the chord called *cadence*, or intermingles with this chord without belonging to it, is, in counterpoint, called *dissonant*.

The *Typometer* is composed of three *cadences*, of which the basses or fundamental notes are the notes 1, 4, and 5 of the key, as we already know.

To serve as an example, let us confine ourselves to the key of

Do, and we shall see that the three *typometrical* cadences of the scale of this key are :—

Sol	Do	Re	Sol
Mi	La	Si	Mi
Do	Fa	Sol	Do
⋮	⋮	⋮	⋮
Cadence of Do.	Cadence of Fa.	Cadence of Sol.	Cadence of Do.
⋮	⋮	⋮	⋮
Bass: 1	4	5—all belonging to the key of Do 1.	

We have already seen, in Rules XI, XII, and XIII, of Chap. IX. § 47, p. 147, that the *transcadence* of *Do* is the *cadence* of *Fa*, and that the *cadence* of *Do* is the *transcadence* of *Sol*. Why is it? Because, as the *Fa* is note 4 in the key of *Do*, so is the *Do* note 4 in the key of *Sol*. The result is consequently that which we have already taught in the general definition of counterpoint: "that singing is nothing more than the conducting of the voice from one *cadence* to another."

But it will be objected, why is there then a chord called *precadence?* Because, we reply, the cadence is susceptible of an alteration called *dissonance*. Hence it is that the whole multitude of false chords, which are distinct according to the ancient counterpoint, are merely an altered *cadence*, and consequently converted into a *precadence* of a new key (*a precadence* more or less pure according to the lesser or greater number of dissonances which are aggregated to it). Such is exactly the case with our typometrical *precadence*. In its pure or primitive state, it is the *cadence* of *Sol (Sol, Si, Re)*; but as soon as it is adulterated by the introduction of a note which does not belong to the gamut of *Sol* (the *Fa*♮), it ceases to be a *cadence* or consonance, and becomes a dissonance or *precadence*. The following example shows in what manner:

Alteration or Dissonance.....Fa♮ 4

We know that in the Scale of *Sol* the note *Fa* is sharp.

5 Re♮.....Re♮ 2
3 Si♮.....Si♮ 7
1 Sol♮.....Sol♮ 5

Cadence of Sol♮. Precadence of Do♮.

Placed in this order, the four notes of the typometrical *precadence*

evidently present a succession of three-thirds: *Sol, Si—Si—Re—Re, Fa.* How is it (we may be asked), the third being the type and the perfection of the musical consonance, that there can be then a dissonance, when these are only three-thirds? Because, as we have taught, the octave of a note is the same thing as the note of which it is the octave, i. e. as its unison; and consequently this *Fa*♮, which presents an interval of a seventh minor against the Sol♮, and of the third against the *Re*, will give us an interval of second, if we reduce it to its lower octave. This is the reason that we see the notes *Fa, Sol,* followed in the gamut by the numbers 4 and 5!!! From this fact, as simple as it is surprising, and which in the Geneuphonic theory occupies several pages full of charm for the intelligent reader—from this fact, we say, is derived all that we are going as briefly as possible to teach, respecting the character and use of the Geneuphonical dissonance, the producer of that agreeable sonority called music.

§ 71. The art of counterpoint considers and treats as dissonances the subjoined intervals, which take their names from the gravest note.

Dissonances

of *Second,* as $\left\{\begin{matrix}\text{Re}\\ \text{Do}\end{matrix}\right.$ of *Seventh,* as $\left\{\begin{matrix}\text{Do}^{8ve}\\ \text{Re}\end{matrix}\right.$ of *Fourth,* as $\left\{\begin{matrix}\text{Fa}\\ \text{Do}\end{matrix}\right.$

of *Ninth,* as $\left\{\begin{matrix}\text{Re}^{8ve}\\ \text{Do}\end{matrix}\right.$ of *Eleventh,* as $\left\{\begin{matrix}\text{Fa}^{8ve}\\ \text{Do}\end{matrix}\right.$

The reader must not be frightened at this abundance of names, for the abundance is really only of words. Let us observe then, that the seventh is nothing else than the second, of which the gravest note has ascended an octave, as we clearly see by the arrangement of the numbers; and we may say the same of other dissonant intervals.

Second: $\left\{\begin{matrix}\text{Re } 2\\ \text{Do } 1\end{matrix}\right.$ *Seventh:* $\left\{\begin{matrix}\text{Do } 1^{8ve}\\ \text{Re } 2\end{matrix}\right.$ *Fourth:* $\left\{\begin{matrix}\text{Fa } 4\\ \text{Do } 1\end{matrix}\right.$

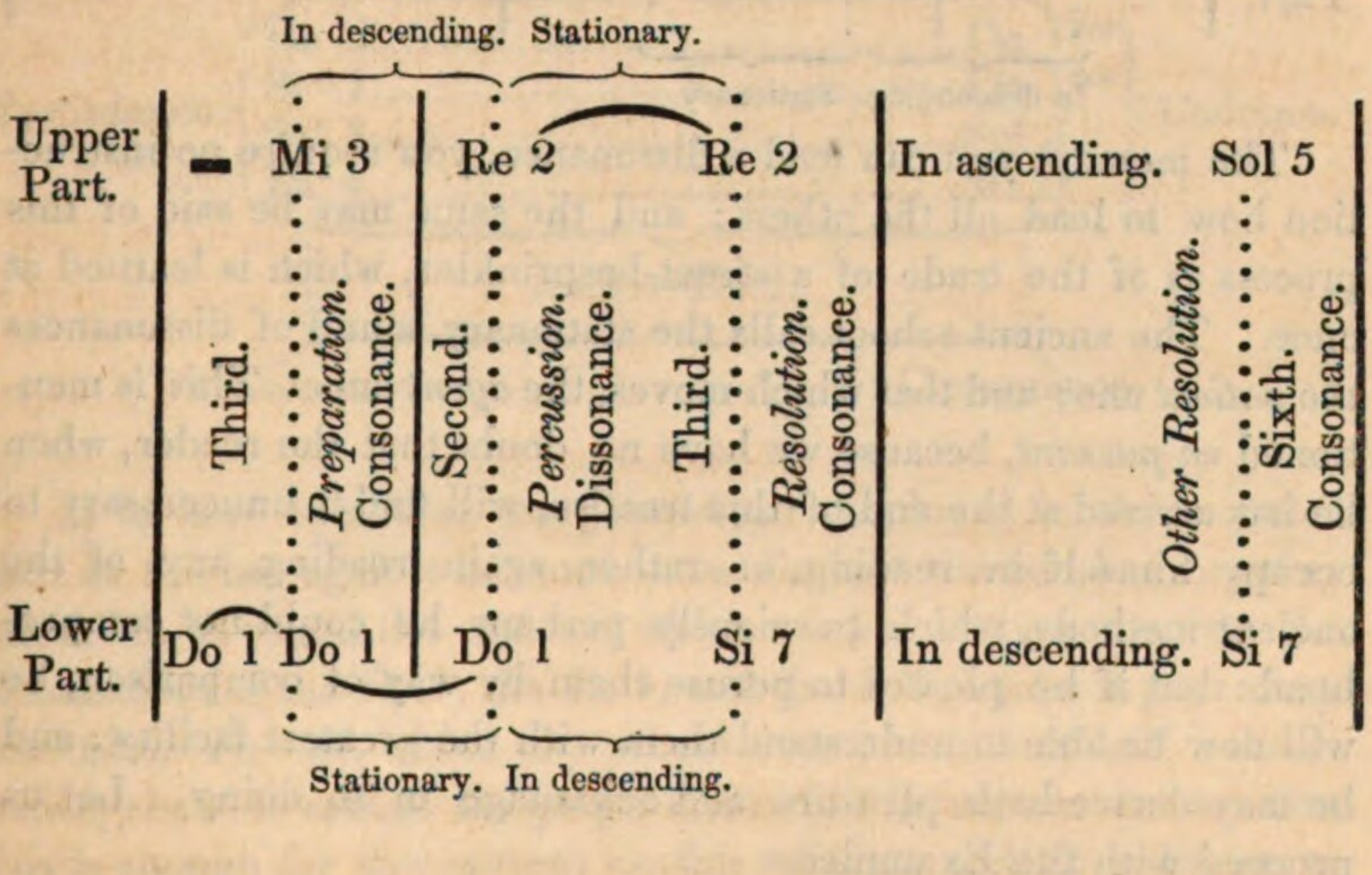
Ninth: $\left\{\begin{matrix}\text{Re } 2_{8ve}\\ \text{Do } 1\end{matrix}\right.$ *Eleventh:* $\left\{\begin{matrix}\text{Fa } 4^{8ve}\\ \text{Do } 1\end{matrix}\right.$

The preceding demonstration is sufficient to convince us that there are no other dissonances truly distinct but those of second and fourth; supposing, however, this latter to be one, which is denied by one half of the classical writers: but that it may not be said that we omitted teaching anything useful belonging to the ancient

school, we are going to extend our instructions to all these dissonances.

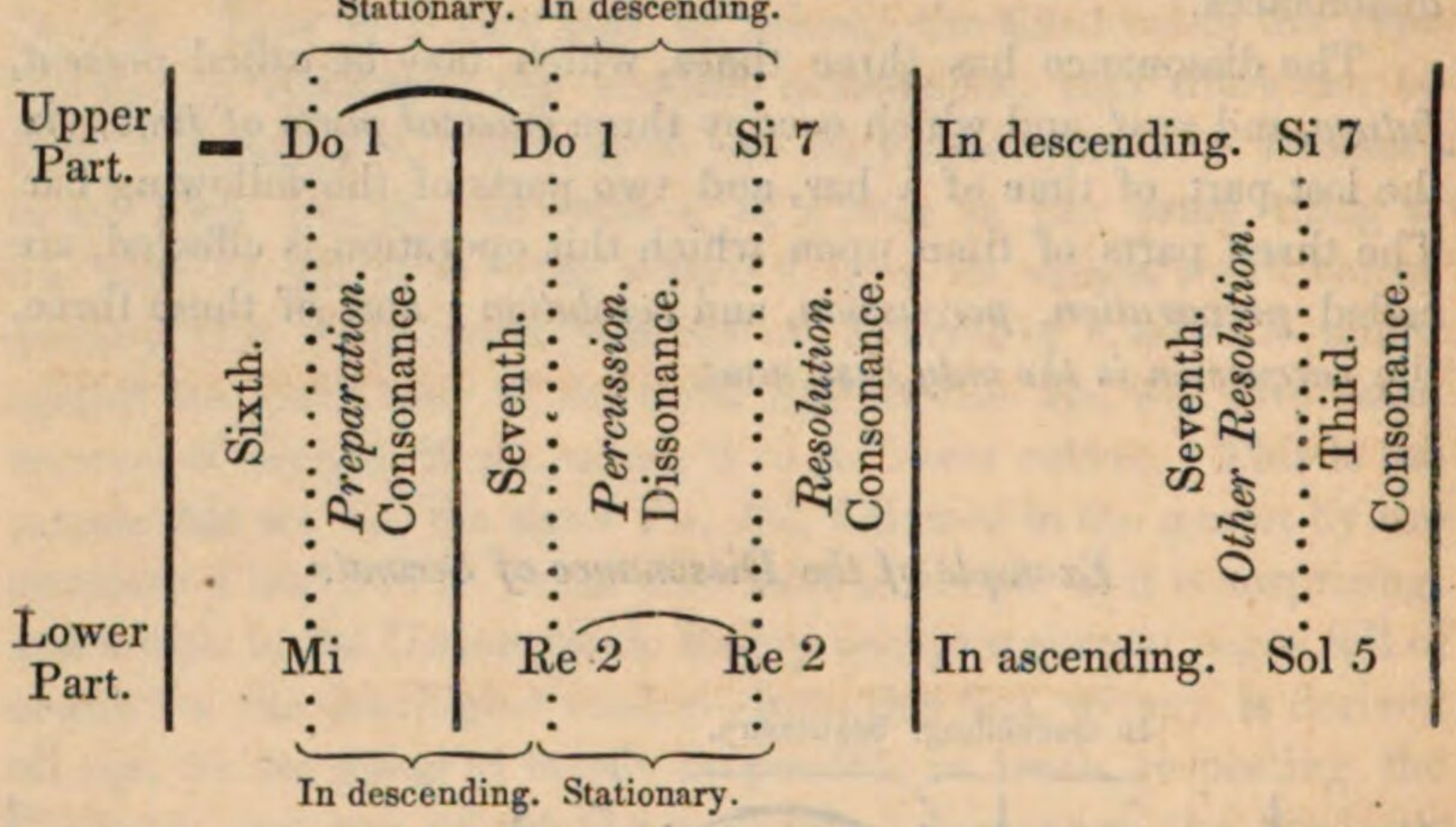
The dissonance has three times, which may be called *present*, *future*, and *past*, and which occupy three *musical parts of time*, viz. the last part of time of a bar, and two parts of the following bar. The three parts of time upon which this operation is effected, are called *preparation*, *percussion*, and *resolution ;* and of these three, the *percussion is the only dissonant.*

Example of the Dissonance of Second.



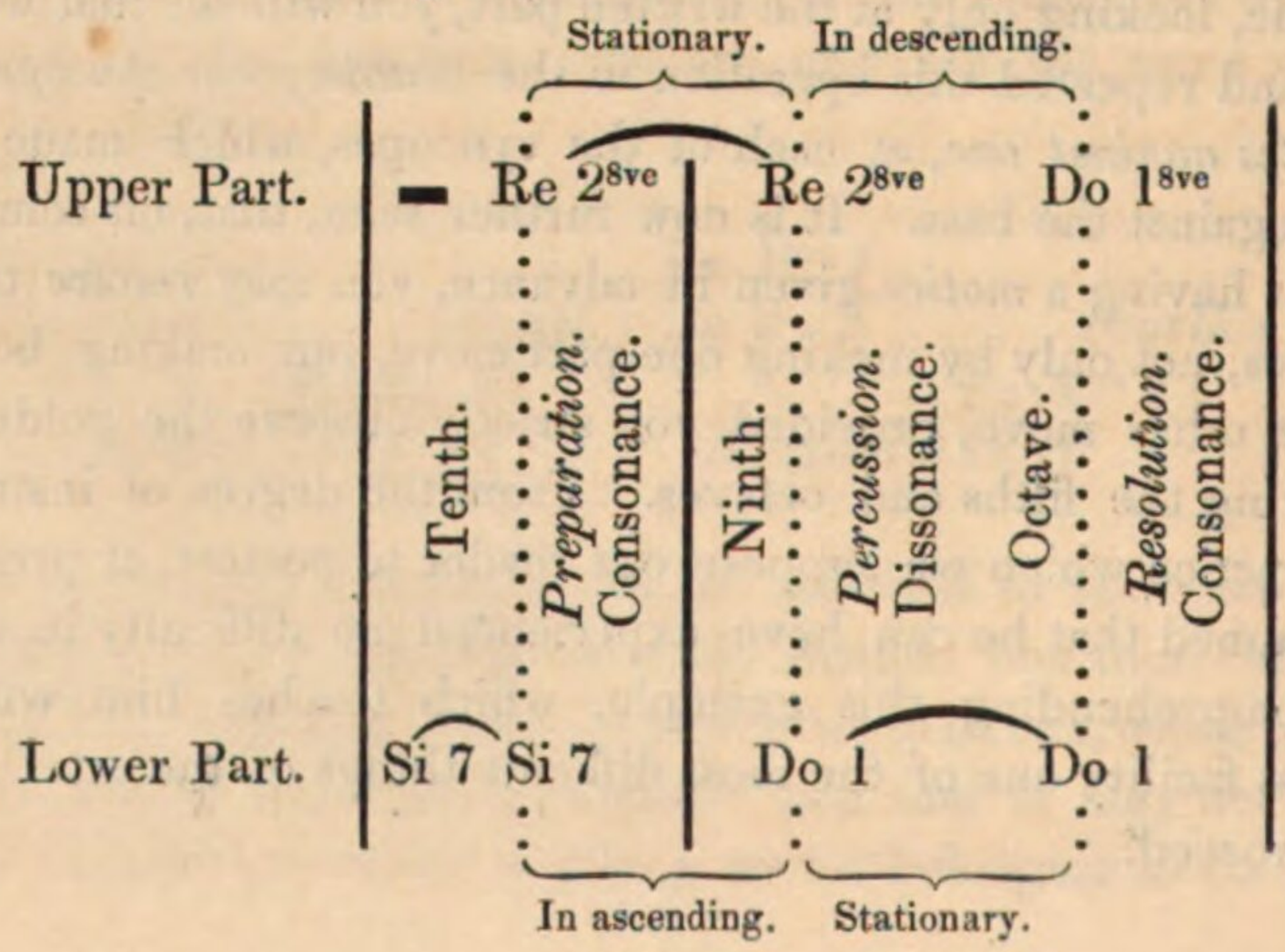
On casting your eyes over this example, or rather on writing it in music, looking only at the written part, you will see that we have made and repeated this operation in the *counterpoint syncoped with two notes against one*, at each of the syncopes, which made dissonance against the bass. It is now further seen, that, on composing without having a *motive* given in advance, you may *resolve* the dissonances, not only by making one part move, but making both one and the other move, provided you strictly observe the golden rule respecting the fifths and octaves. From the degree of instruction and practice which we suppose our reader to possess at present, it is presumed that he can have experienced no difficulty in writing and comprehending this example, which teaches him with the greatest facility one of the most difficult things of the art. Let us then proceed.

§ 72.—*Example of the Dissonance of Seventh.*



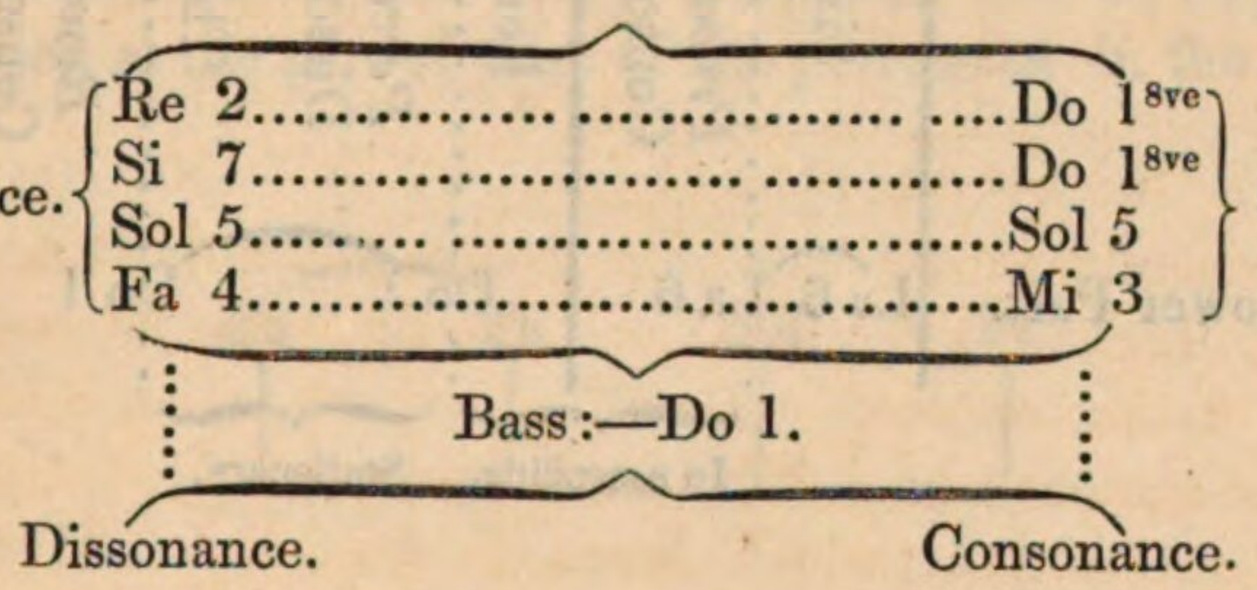
The moment you can lead a dissonance, you require no instruction how to lead all the others; and the same may be said of this process as of the trade of a street-besprinkler, which is learned at once. The ancient school calls the stationary sound of dissonances the *patient* one; and that which moves, the *agent* one. This is mentioned *en passant*, because we have no doubt that the reader, when he has arrived at the end of this treatise, will find it unnecessary to occupy himself in reading, or rather again reading, any of the ancient methods, which previously perhaps he could not comprehend: but if he pleases to peruse them by way of comparison, he will now be able to understand them with the greatest facility; and he may derive both pleasure and advantage in so doing. Let us proceed with the Examples.

§ 73.—*Example of the Dissonances of Ninth.*



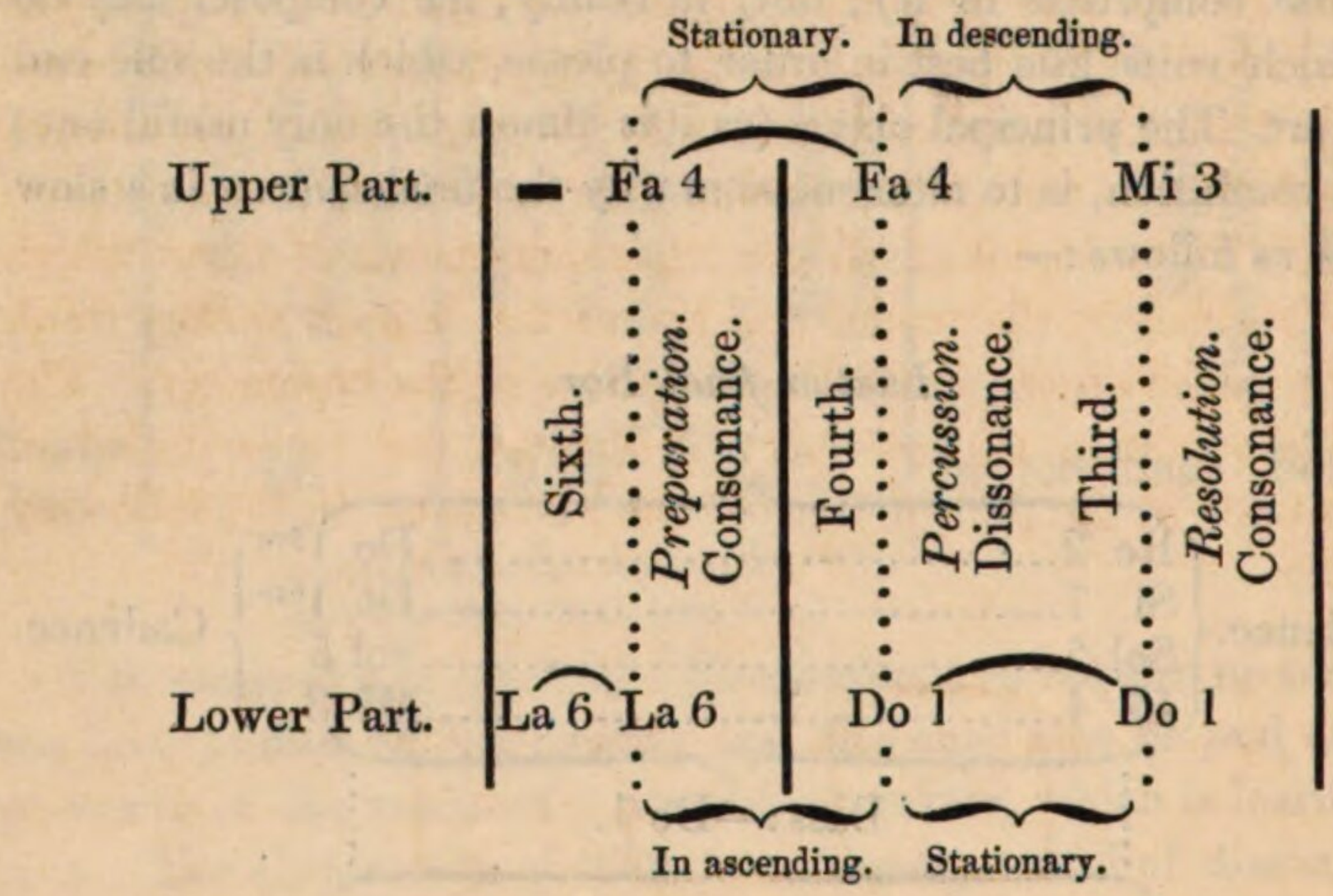
It is clearly seen here that the ninth *resolves* itself in an octave, and not in a tenth as it could have done, merely because the ancient school prohibits resolutions in greater intervals than the octave (intervals which it calls *compound*, just as it calls *simple* the octave and those comprised in it); but, in reality, the composer may do that which suits him best in order to please, which is the sole end of the art. The principal object (as it is almost the only useful one) of this resolution, is to alter momentarily the final *cadence* in a slow air, just as follows:—

Last or final Bar.



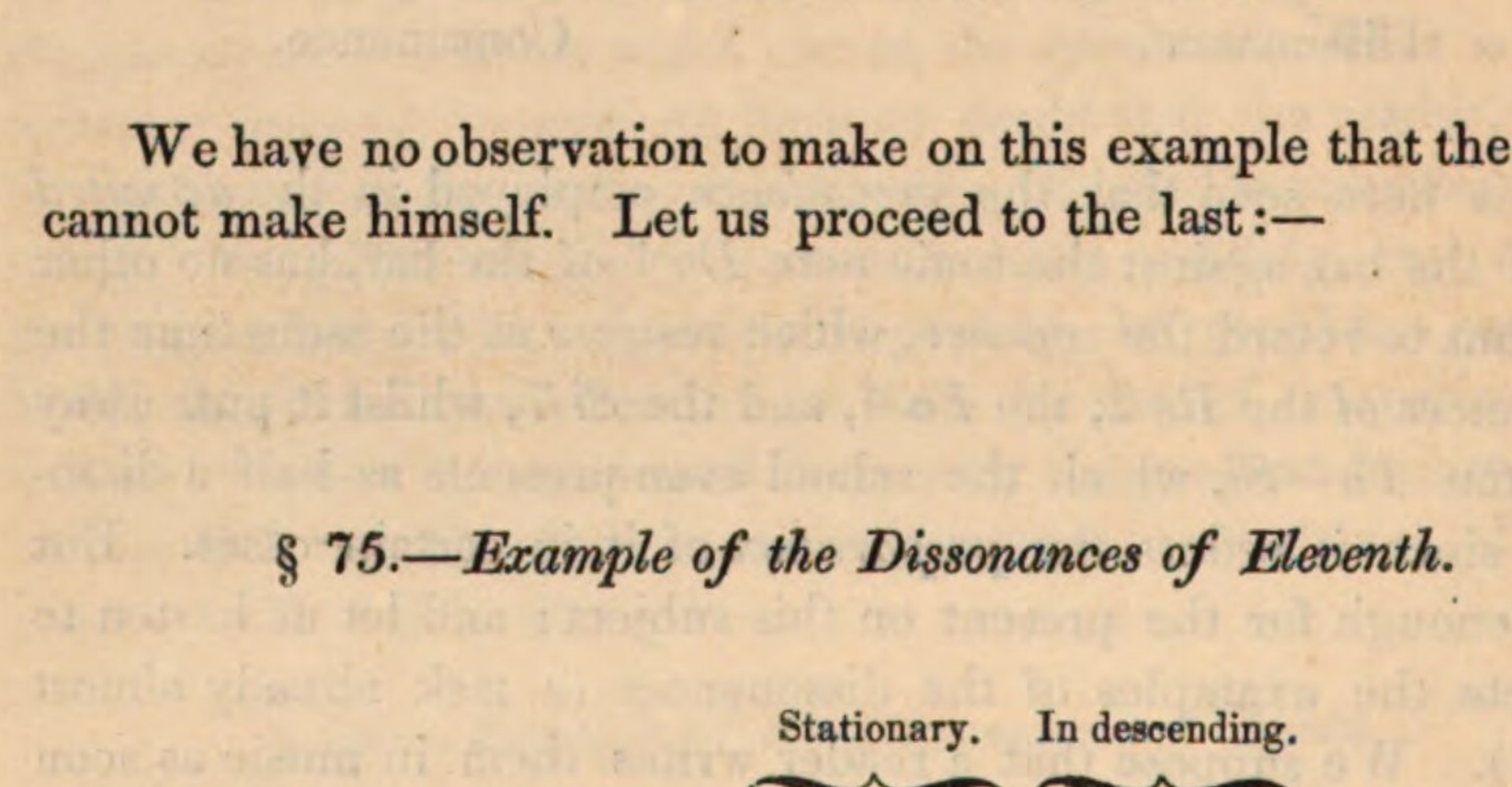
It is here seen that the *precadence* employed in the *accented* part of the bar against the tonic note *Do* 1 of the bar, has no other effect but to retard the *cadence*, which *resolves* at the same time the dissonances of the *Re* 2, the *Fa* 4, and the *Si* 7, whilst it puts away the triton *Fa—Si*, which the school even presents as half a dissonance, since it orders the *preparation* of it in certain cases. But this is enough for the present on this subject; and let us hasten to complete the examples of the dissonances (a task already almost useless). We suppose that a reader writes them in music as soon as he sees them written in letters, in order that he may be able to correct his work afterwards. For this purpose, we advise him to have a small copybook, in which he may write in music, gradually as they come, all the examples which, with this intention, we give him only in letters, in order that he may have them at hand in case of any doubts arising when he first begins to compose.

§ 74.—*Example of the Dissonance of Fourth.*

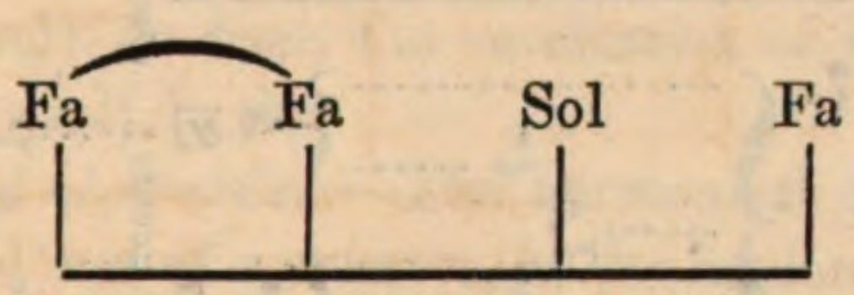


We have no observation to make on this example that the reader cannot make himself. Let us proceed to the last:—

§ 75.—*Example of the Dissonances of Eleventh.*



We have at last concluded these numerous and perhaps useless repetitions of one and the same operation, and we present them here merely for the purpose of satisfying the most scrupulous masters. Three general observations may be added, of which till now the reader was perhaps incapable of feeling the just weight and accuracy. The first is, that in the typometer are found composed and put in practice these rules of *preparation*, *percussion*, and *resolution*, as well as the golden rule on the fifths and octaves, together with examples of all the other movements of parts, which may be verified by the reader and his master, as soon as they think proper to make on the board the dissection of the typometer. The second observation is, that every dissonance can be amplified or glossed upon at the part of time of the *percussion* in the following manner:

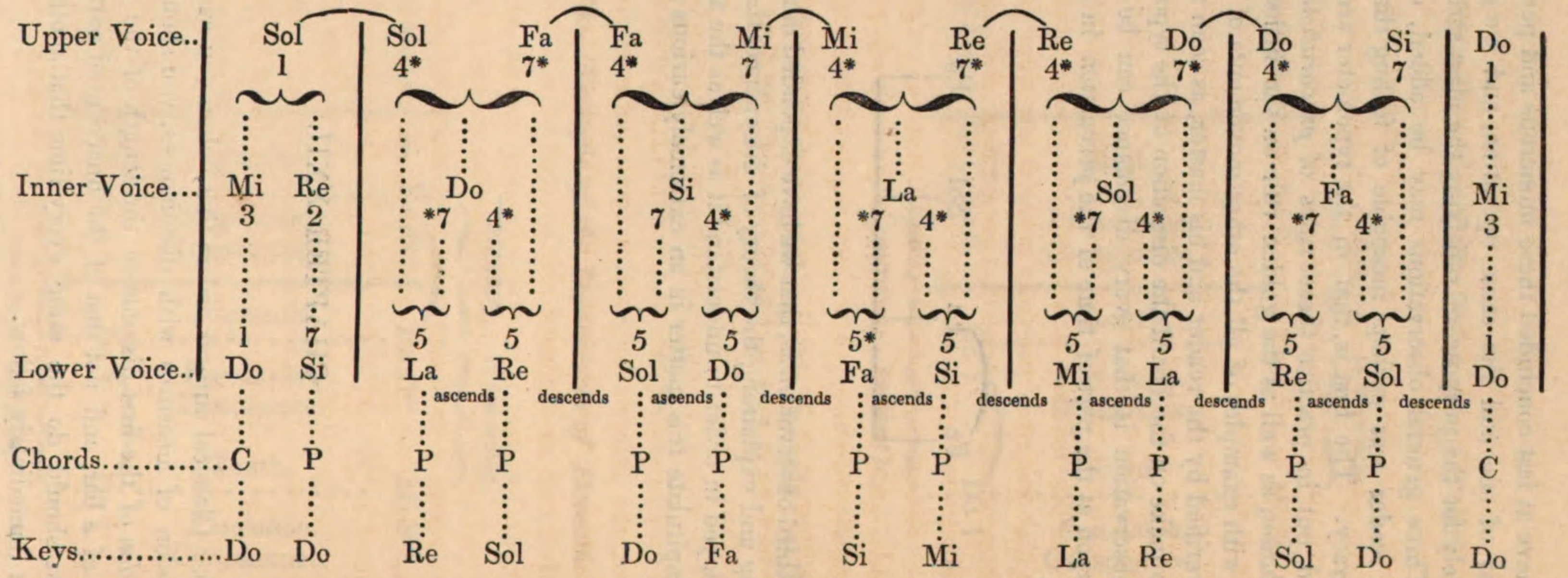


The third observation is, that we have expended much more time in writing and explaining the theory of dissonances than the reader has employed in order to understand it as well as the authors. We shall recapitulate this matter in an extremely curious example.

CHAPTER XXII.

§ 76. Classical authors ordain that, when you wish to compose a succession of measures with dissonances, you should give to the *preparation* of the first dissonance the length of the accented part of time of a bar, and not that of the unaccented part of time, and that you should do the same every time that another dissonance does not immediately follow.

Example of a Succession of Bars with Dissonance in every Part of Time.



Analysis of the preceding Example.

Let the reader write this valuable example in music, before he sees how we have written it ourselves, and follow us quietly, as the explanation of it is as simple as it is pleasing and instructive.

First observation.—Of the thirteen chords of this example, only the first and the last are consonants, and consequently *cadences:* the other eleven are dissonants, and consequently *precadences.* The reader no doubt recollects that we have laid it down as a new and fundamental axiom, that, in harmony, counterpoint, and composition, there are only *precadence* and *cadence,* and that consequently "every chord which does not present purely and solely the Nos. 1, 3, and 5, is not a *cadence,* but is exclusively a *precadence.*" But he will probably ask us whether we have deduced this axiom from the mere observation of the fact (as are deduced the good axioms of the ancient school), or from the verification of its natural causes? He will find our reply in the

§ 77. *Second observation.*—The harmonical generation is born of *destruction* and not of *resonance,* as the moderns pretend, nor of *mathematical proportions,* as has been vainly attempted, from the most remote antiquity, to be proved: but let us leave this subject either for the following treatise of this work, or the one we intend to publish hereafter. The fact is this—wherever there is dissonance, you see two notes or sounds which have in themselves the necessary and exclusive character of number 4 and number 5; and as, in the gamut, the inferior number is lower or more grave than the higher number, it is clear that in the order of the gamut the lower number is 4 and the higher 5.

Demonstration.

Dissonance.	Dissonance.	Dissonance.	Dissonance.	Dissonance.	Dissonance.	Dissonance.
4 5	4 5	4 5	4 5	4 5	4 5	4 5
Do Re	Re Mi	Mi Fa	Fa Sol	Sol La	La Si	Si Do
⋮	⋮	⋮	⋮	⋮	⋮	⋮
Sol 1	La 1	Si 1	Do 1	Re 1	Mi 1	Fa 1

Keys or Scales generated by the shock of Nos. 4 and 5.

We have taught and proved that all the sounds or notes of music are by their nature *tonics,* or notes 1 of their gamut, and that they *exclusively* carry with them the amalgamation or accompaniment of their numbers 3 and 5, which constitute two thirds, the

one major, the other minor. The fact is, that this chord of three tonics ceases and destroys itself as soon as another tonic (whichever it may be) approaches one of them at a distance less than that of a minor third. This shock destroys, absolutely annihilates, with the rapidity of lightening the tonogamic potency of the three notes, and instantaneously produces a new power, let us say a new scale, a new key, which is necessarily and exclusively that of which the two notes affected by the shock are numbers 4 and 5. Such is the process of nature to effect a transition or change of key. It is on this account, that as soon as two notes, which convert themselves into 4 and 5 of a key, clash one with another, there appears with them a note foreign to the anterior key, and this note, which bears No. 7, presents itself with an accident which it had not before, and which raises it half a degree. Does the *Tonic Re*, for example, clash with the *Tonic Do* ? They are immediately converted into *Do* 4, and *Re* 5, whilst the *Fa*, which in the key of *Do* was natural, appears simultaneously raised half a degree or sharpened, and declares itself No. 7 of the new key. The new key then is *Sol*, the *precadence* of which is produced by the destruction of the *cadence* of *Do*. And as we have proved that, whenever the numbers 4, 5, and 7 are united, thence the number 2 will also proceed, it is therefore indubitable that the new complete chord, in whatever manner the notes are placed, is the

precadence of *Sol* $\begin{Bmatrix} \text{Fa}\sharp\ 7 \\ \text{Re}\natural\ 5 \\ \text{Do}\natural\ 4 \\ \text{La}\natural\ 2 \end{Bmatrix}$

§ 78. *Third observation.*—Such is precisely the beautiful operation practised eleven times in this example, in the eleven dissonant chords, or eleven *precadences* which we see there. The numbers 4 and 5, which we observe in every one of them, leaves no doubt that the melodies have always marched from *precadence* to *precadence :* that is to say, that, at the time of each precadence falling upon its *cadence*, the composer has not thought proper to present it pure, but has altered it according to the simple principle we have already and repeatedly taught, that "every *cadence* is the *precadence* of its note 4 ; that is to say, of a key four degrees higher than its own." Thus, for example, the *cadence* of *La* is the *precadence* of *Re*. See the first and second bar of the examples of *Prolegomena*, § 72, p. 88 : see moreover the example at the beginning of § 76, p. 204. The bass, bar 2nd, in pronouncing the *Re*, does not mark it number 1, but, on the contrary, No. 5; in order that, with the *Do* 4, it may form, instead of the *cadence* of *Re*,

the precadence of *Sol;* and, following the same process in the following chord, we give to the *Sol* the No. 5, instead of giving it the No. 1, that, in concert with the *Fa* 4, it may form the precadence of *Do*. This march continues till the last bar, in which alone, seeing the necessity of terminating with a *cadence*, the *Do* is marked with the No. 1, to be able to join to itself the 3 and the 5. In short, the reader will observe, that in the eleven dissonant chords of this example the bass bears the No. 5, which in the Typometer is the number which serves as typometrical or fundamental bass to the *precadence*.

§ 79.—*Fourth observation.*—The words *ascends* and *descends*, which we see in the bass, merely prove that "in harmony (as we know already) a note is the same thing as its octave" (see Prolegomena, § 6, p. 74); thus the true tonic progressions of the bass from the thesis of the second bar are entirely ascending, and mount by intonations of fourths (as we see marked in a stave placed above the noted example) just as follows:

La, Re, Sol, Do, Fa, Si, Mi, La, Re, Sol, Do.

The ancient school, with great propriety, calls this operation *deceptive* or avoided *cadences;* and we should have allowed it to retain this name, had not we wished to preserve the simplicity of the Geneuphonic system, in which every thing is explained by the two words *precadence* and *cadence*.

§ 80. *Fifth observation.*—To the reader who knows perfectly that the complete *precadence* is composed of four sounds or notes, it is evident that, as the example under analysis presents only three parts, he can add to them a second interval or supplementary part, which in the eleven precadences must be always distinct from the other three. The reader may amuse himself with writing this part, which he will be able to do with the greatest facility, and without being liable to commit a mistake, as he will see at the first glance that the No. 2 is the only one wanting in all the precadences from the second bar. We also advise him, after he has begun writing this example, to continue to write, from the third bar, out of his own head; viz. without looking at our letters after the third bar; for, as all the others are made exactly as the second, the movement of the parts in this second bar gives the model of the movement or the march of all the others. We beg leave to repeat to him once more, that it becomes every day more necessary and more interesting to him, as he is gradually ad-

vancing in knowledge, to get every example that he copies or composes immediately played on four instruments.

§ 81. *Sixth observation.*—The reader will have remarked that in the above example, as well as in that of Chapter XX, we have placed alongside of some notes near their numbers the sign *, which denotes *cacophony*, *imperfection*, and consequently *dissonance*, as regards the chord. The motive for adding this sign is very curious. It is this: in order to render our new instruction conformable to every thing useful in the ancient method, we have made it a law to present the theory of counterpoint without employing a single *accidental* alterative sign in all those examples where the use of sharps and flats was not indispensable to the perfect intelligence of the rules which those examples had for their object to prove. This restriction saves from all alteration the gamut of the key in which the example is written; and hence it is also procured, that this key is the only one that always reigns and domineers in the ear, in spite of all the combinations to which its notes are subject, in the march of the melodies and the chords. It is the employment of this restriction which the ancient school (confounding the mode with the key) calls *modulating* within the mode. This discovers to the reader the signification of these asterisks (*). Let us then examine them at present, and we shall see that all the notes 7 which bear this asterisk (*) want an *accident* or *alterative sign*, which they ought to have, entirely to justify their number.

For example: *Second bar*, 1st chord { Sol♮ 4 / Do♮ 7* / La♮ 5. }. This note *Do*♮*, in order to be the true 7 of the key of *Re*, ought to have a sharp; but this is of no consequence, as its name of *Do*, which is the name of 7 in the six scales or keys of *Re*, enables it to represent sufficiently the true 7 which is *Do* sharp; and the absence of the sharp preserves in its integrity the character of the reigning key, which, being that of *Do* natural, has no sharp to the *Do*.

In the same bar, 2nd chord { Fa♮ 7♮* / Do♮ 4 / Re♮ 5 }, that *Fa*♮*, in order to be the true 7 of the key of *Sol*, should have a sharp; but this is of little consequence: its name of *Fa*, which is the name of 7 in the six gamuts or keys of *Sol*, being sufficient to represent adequately the true 7, which is *Fa* sharp; and the omission of the sharp preserves in fact the character of the prevailing key, which, being that of *Do* natural, has no sharp at the *Fa*.

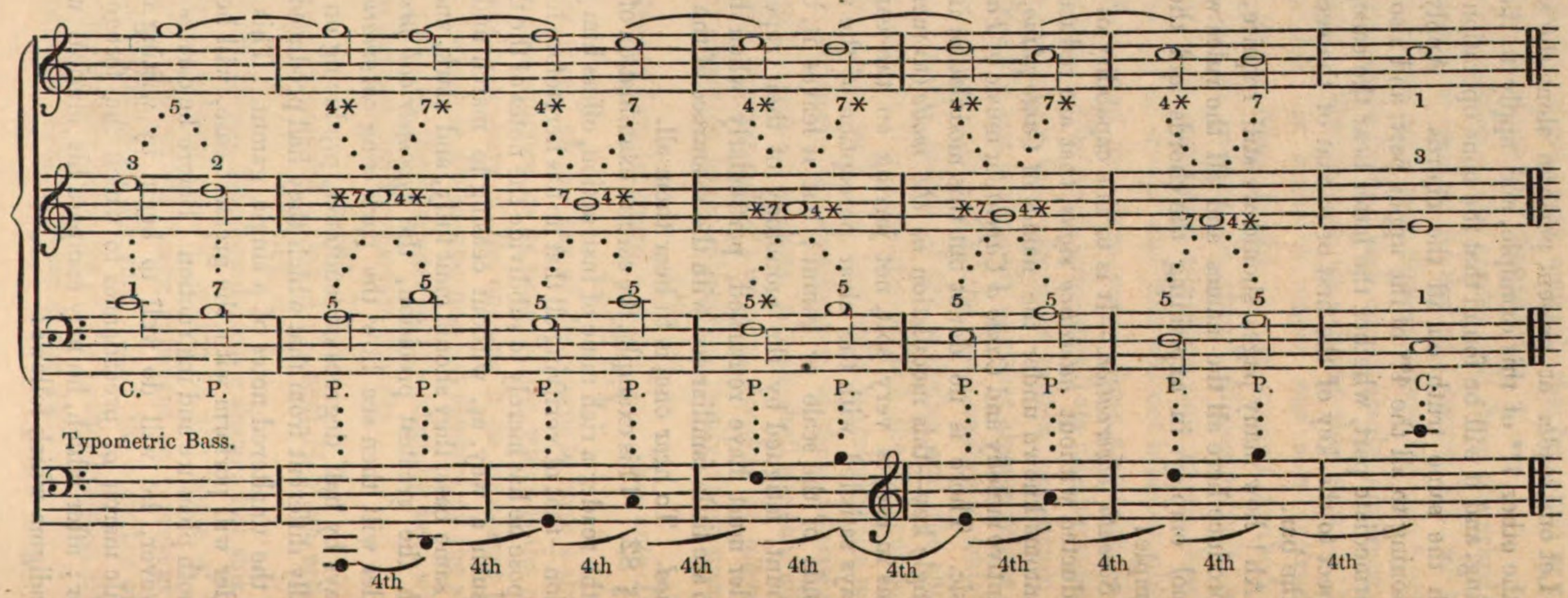
Let our reader at present perform alone the same examination of the other 7** of this example, and apply to them the same reasoning, and it will be found that the same operation will be practised with the same truth on all the chords. Apply also the same reasoning to all the 4** of the upper part, and also to the 4** of the intermediate part, whether the latter bear the cacophonic sign with respect to the key of the first or to that of the second part of time of the bar.

Ah! how many pages should we still require, if we wished to re-produce here all the names and all the rules which the ancient school employs in explaining the chords and the march of this example!

Seventh observation.—It is to this capability of a melody being conducted without *alterative signs*, that are reduced the two grand phantoms known under the names of *Canto-plano*, *Canto-fermo*, or plaintive melody and *Canto à Capelâ*, or music of *Facistol*, or Church music. There is no doubt but this modulation in the compass of a single key—this modulation *in the mode* (to mention the various terms in use) is very soft, not jarring on the ear, but keeping it always satisfied with the clear perception of the seven unchanged sounds of the scale or gamut; but it leaves it, on the very same account, fatigued by the monotony of their repetition. This the reader must have remarked, particularly when hearing organists who are little familiarised with the resources of the kind called *flourished.* To hear one, is to hear them all.

§ 82. This example, the careful examination of which will prove for the reader a rich mine of instruction, offers him yet another occupation—that of verifying all that he has heretofore learned; for which purpose he has merely to subdivide the notes of the three upper parts, in such a way, as, without ceasing to march under the control of the same bass, they should emit fully, and mark, and even articulate with the greatest precision, the *typometrical precadences.* The reader will then see how the parts sing *chromatically*, i. e. nearly always by half degrees or semitones, producing on the ear an effect totally different from that which they had produced at first in singing the unaltered notes of a single gamut. This work, which the reader will perform with the greatest ease, will be to him a source of both pleasure and instruction. Before he carries it into execution, however, he will do well to begin by writing in music the harmonic march of precadences to which the foregoing observations refer; after which, he may compare his musical writing with the paradigma which follows:

Example of an Harmonic March by Precadences.



The foregoing observations just alluded to will suffice; and we conclude by proposing to the reader to write it over again, and hear it sung in a different manner, namely, *by omitting the note* 4 *in all the bars, and substituting the note* 2 *in its place*, by which means the whole example will be reduced to pure *cadences* without any *precadence*, or, in other words, without any *dissonance*. In this case, all the notes now bearing the number 5 will bear number 1, all those bearing the number 7 will become number 3, and all those which are numbered 2 will assume the number 5. The harmonical matter will be then replaced in its natural and fundamental state, which is the cadence 1, 3, 5. Let us proceed; little remains to be said.

The reader has probably remarked, that all that we successively teach him is but the *explanation of a single fact or principle*, and the application to various examples of that same fact, which, like a new mariner's compass, guides and conducts him (without it being possible for him to lose his way) through the most profound and remote gulphs of this ocean, hitherto considered as having no shores, and called Harmony. Even this *unity* of principle renders the teaching of it monotonous; and as we have, moreover, stripped it of all its erudite and sonorous names, as well as of its forced and gigantic definitions, the reader has little more to do, at every step we make with him, than to look back and recognize that he already knew what is going to be presented to him as new. It is, if we are not mistaken, what is going to happen to him in the following explanations of the remaining kinds of Counterpoint.

CHAPTER XXIII.

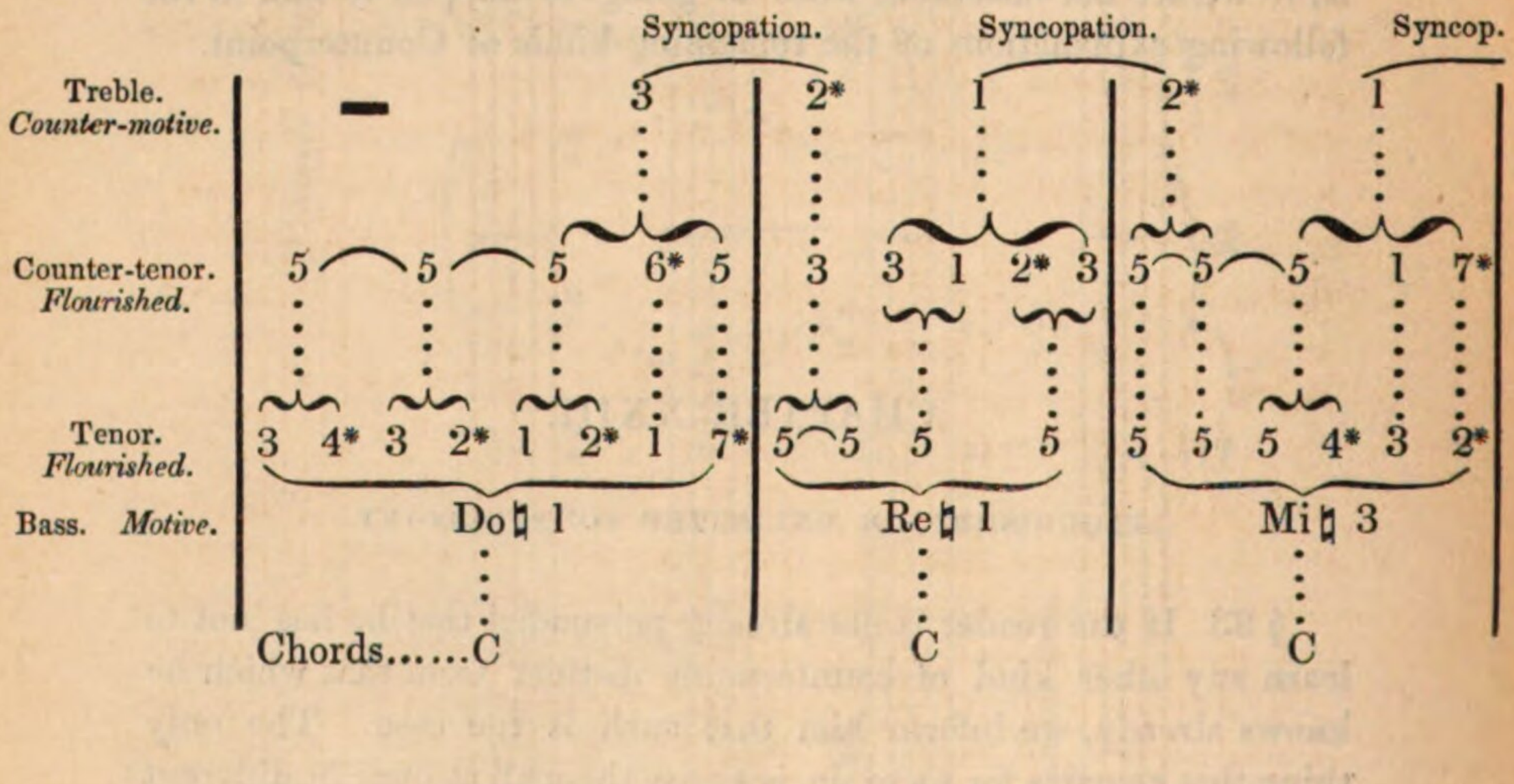
FLOURISHED OR UNLIMITED COUNTERPOINT.

§ 83. If the reader is not already persuaded that he has not to learn any other kind of counterpoint distinct from that which he knows already, we inform him that such is the case. The only thing that remains for us to do, is to use them all at once in different manners to produce the effects which exercise more or less the attention of the ear, or produce in it more or less excitement or

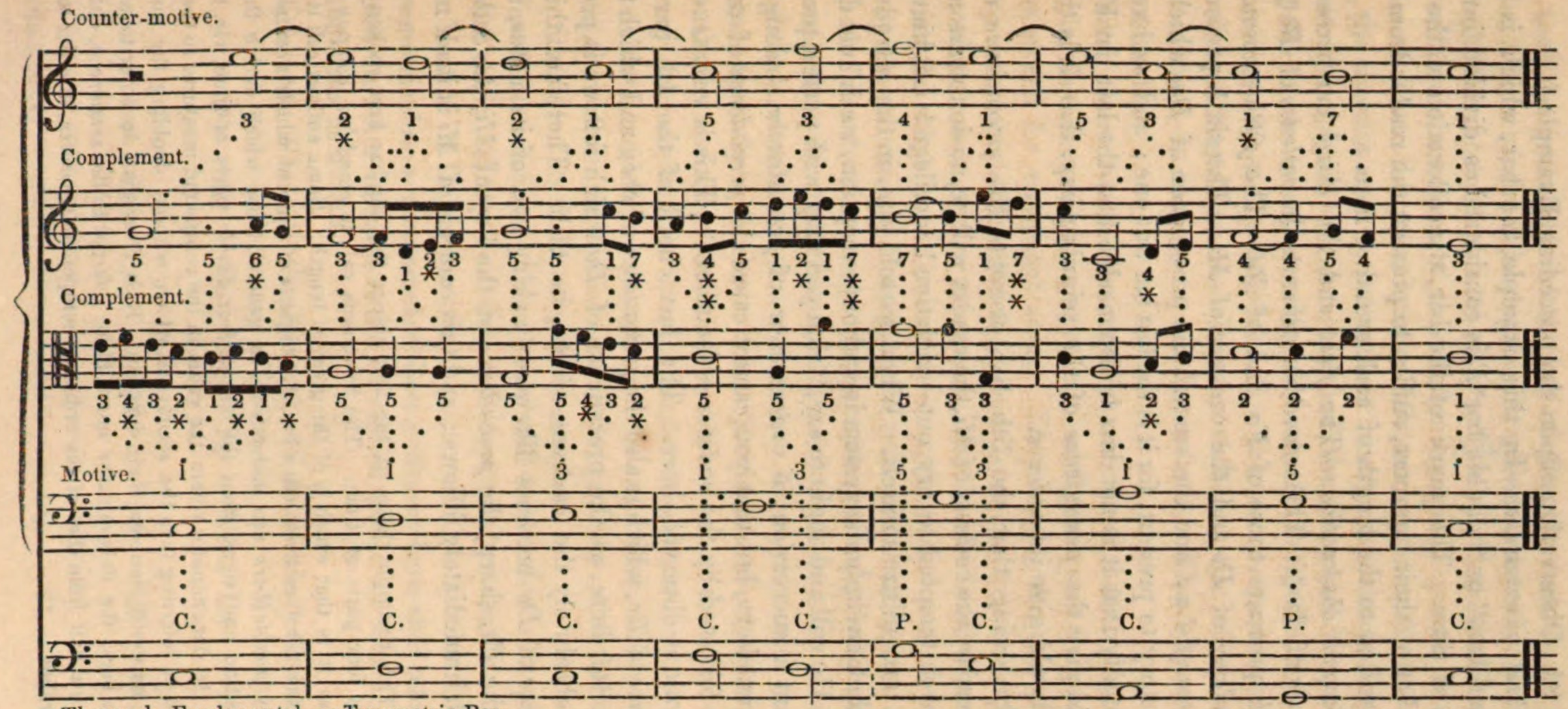
pleasure. What remains for us to do, is precisely that which a person would do, who, being perfectly acquainted with the art of writing with correct orthography, would exercise himself in making flourishes and ornaments in order to embellish his letters, in modifying their forms in such a manner as to attract the attention of the eye and charm the sight.

The flourished counterpoint is, of all composition, that in which the reader freely employs all figures of notes whatever, as his subject or his fancy may suggest to him, in whatever number of voices and instruments. This being understood, the reader is now informed that he is at liberty to employ sixteen figures, or eight, or four, or two, or one, *against one;* provided that, in doing so, he submits to the rules he has followed with respect to the other counterpoints. He will consequently perceive that we teach nothing new in the following example, of which the *motive* or the bass is the same as that we have employed in the preceding counterpoints; viz. *Do*𝅝, *Re*𝅝, *Mi*𝅝, *Fa*𝅝, *Sol*𝅝 *La*𝅝, *Sol*𝅝, *Do*𝅝. The treble is also the same we made use of in the *syncoped counterpoint.* The counter-tenor and tenor, which are now added, are the ornamental, or, technically, the *flourishing* parts.

First, Second, and Third Bar of the Example of Flourished Counterpoint, for Four Voices.



Example.



Thorough, Fundamental, or Typometric Bass.

§ 84. Observations upon the preceding Example.

First observation.—In this example, the bar, which is called "grand bar," or "double bar*," is considered as divided into four parts of time. The mark of the bar, the collocation of the notes, and that of their numbers, suffice to prevent the reader from being deceived as to the length of each sound or note.

Second observation.—The *first* and the *third* bar present the *cadence* of *Do*♮. The *second* bar presents the *cadence* of *Re*♮. The *fourth* presents those of *Fa* and of *Re*. The *fifth* presents the *precadence* of *Do* and the *cadence* of *Mi*. The sixth presents the *cadence of La;* and the *seventh* the precadence of *Do*, which it is obligatory to present, for it is the last bar but one; and we have seen repeatedly that it is not less indispensable that the last bar but one should give the *precadence* of the reigning key, than it is that the last should give its *cadence*.

On seeing that the 5th bar presents the *precadence* of *Do*, followed by the *cadence* of *Mi*, the reader will be, no doubt, astonished, and even tempted to cry out—violation! sacrilege! Let him, however, tranquillize himself. When we told him, in the introduction, that theGeneuphonic system is without exception, we did not deceive him. He will and ought to say, "that you may with perfect propriety present a succession of *cadences* or of *precadences*, belonging to different keys, but that you cannot cause the *precadence* of one key to be followed by the *cadence* of another." This is very true; and this rule is observed here. The last chord of the 4th bar is the *cadence* of *Re*, which is also the *precadence* of *Sol;* and which figures the better here, as the precadence of *Do* which follows is precisely and absolutely the *cadence* of *Sol*, its fifth. Therefore this *precadence* of *Do* becomes likewise (making two of its notes, the *Re* and the *Fa*, sharp) the *precadence* of the key of *Mi*, the *cadence* of which immediately follows; and this *cadence* of *Mi* is itself nothing

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* This Example shews at the first glance that the bar here spoken of consists of four parts of time. The Spaniards call it *grand bar (compas mayor)*, because it is that which is of the greatest length. Some authors call it *double*, because it resolves itself into a bar of two parts of time, of which it contains two; but by *double bars* are understood, in general, those which derive their denomination and signs from the *bar* of four *double* parts of time, viz. those of which the denominator refers the value in the compound measures to the *breve*, instead of referring it to the *semibreve*, which, without doubling the number of notes, naturally doubles their duration. It is clear that, in order to mark the double bars, the denominator must, if he referred to the *semibreve*, cut off the numerical half from that of the ordinary compound measures, in order to double their value.

more than the *precadence* of the key of *La*, the *cadence* of which fills the whole of the following bar, in which its notes are profusely scattered. What concatenation! what accuracy! what an uniformity! observe how the author of this charming piece passes from the *cadence* of *La* to the precadence of *Do*, taking, in each of the four parts, the shortest road to arrive there: in the bass, descending from the *La* to the *Sol*, and, in the treble, from the *Do*, which he syncopes, to the *Si:* in the tenor, ascending from the *Do* to the *Re*, and, in the counter-tenor, from the *Mi* to the *Fa:* thus in two parts ascending to or descending from one degree, whilst in the other two he descends from or ascends to only a semitone. This example is a perfect model.

Third observation.—The two interior parts, which are, in this example, the ornamental parts, proceed with grace and freedom, and always search for consonant notes. They employ for this purpose *passing notes;* both of them taking care, however, that their passing notes, when heard at the same time, should not be dissonants the one with the other, though they are so against the bass. It is what we may observe in the last part of time of the third bar, during which the counter-tenor and tenor, marching equally by quavers, are consonant with one another, whilst it is of little importance that one of them should cause a momentary dissonance with the bass, and consequently with the treble. Having made the analysis of this example, and communicated to his master all the observations that may have occurred to him, the reader should attempt to compose without assistance other examples of the same kind, which we have no doubt whatever he will be able to do, not only with facility and promptitude, but in the most perfect manner.

Fourth observation.—The reader will have seen with pleasure how the choice of the *cadences* has depended on the flourishes or on the march of the intermediate parts, and has produced either a typometrical or a fundamental bass different from that which has resulted in other examples, the *continued motive* or *bass* of which was the same as in this.

Fundamental Bass of the Example of Flourished Counterpoint.

	1	1	1	1	1	1	1	5	1
	Do	Re	Do	Fa	Re	Mi	La	Sol	Do
Bars.....	1st	2nd	3rd	4th		5th	6th	7th	8th
Chords.....	C	C	C	C		C	C	P	C

Fifth observation.— The advantage which the reader is sure to derive from the examination of this example is an entire conviction of the simplicity and accuracy with which nature proceeds, as well as of the luminous manner in which it explains itself to him, who, instead of inventing laws and ascribing them to it, confines himself to consult it, and listen to it with docility and good faith. Nature, the immortal work and clear echo of the infallible, absolute, and always true will of its Author, never leads him astray who consults it with humility, attentive eyes, and pure ears. Harmony of sounds sings the glory of the Creator as fully as the harmony of the stars. But let us proceed.

CHAPTER XXIV.

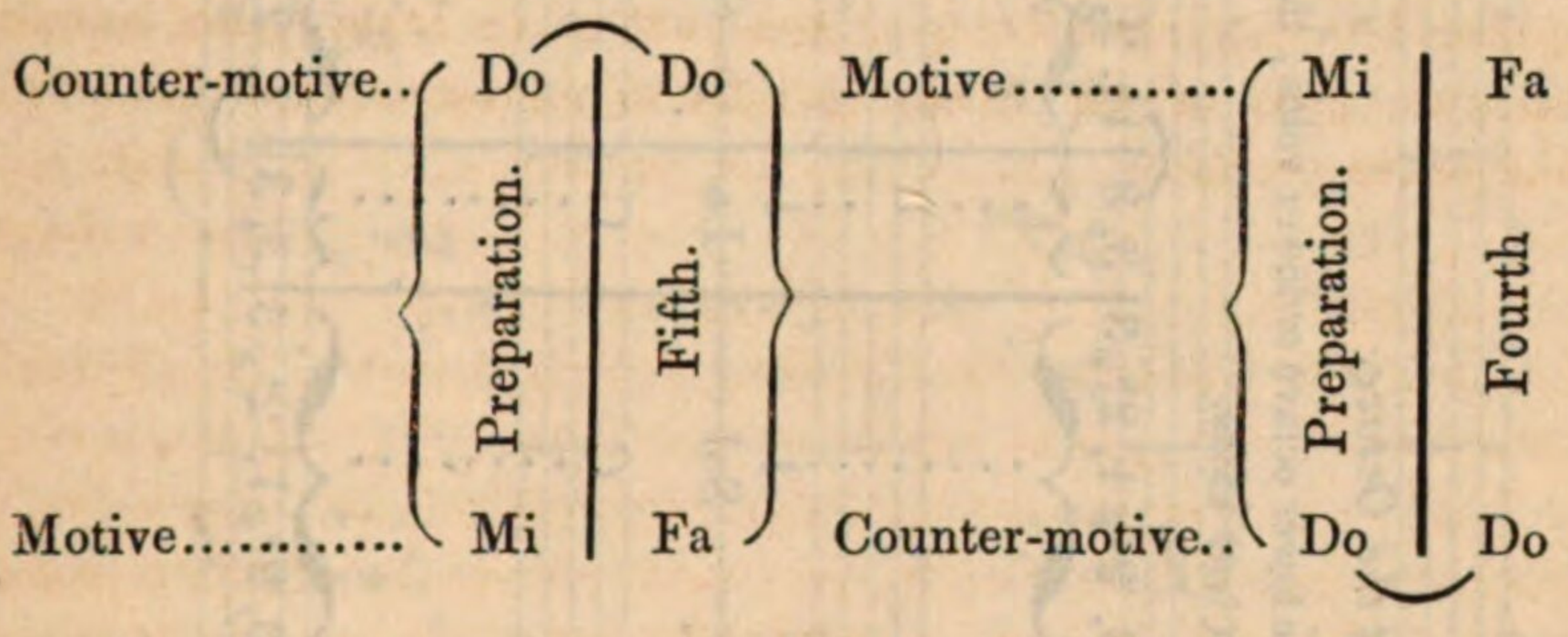
COUNTERPOINT DOUBLE AT THE OCTAVE.

§ 85. The ancient school calls *counterpoint double at the octave* another form of counterpoint, of which one of the most celebrated authors says : " That it is the counterpoint *par excellence,* because it offers the resources of all the others in producing the same results, and that it is called *octave counterpoint,* because it has the power of transporting itself from the high to the low octave of the *motivo,* and vice versâ."

In spite of the emphasis of this distinction, our reader will know that this counterpoint is very simple, and that, on comparing it with those he has already learned, he will see nothing new in it. The only observation to which it gives rise, is that, in making use of

it, it is always necessary to prepare* the fifths; because, as they become fourths at the lower octave, they become in this way *prepared* when the *counter-motive* is transported to the lower part.

Example of the Preparation of the Fifth, which becomes Fourth on the passage of the counter-motive to the lower part.



You have, above, all that is necessary to be known in order to exercise yourself in this counterpoint. We invite the reader to study perseveringly the following example, to make an analysis of it, and re-write it, nominally changing its chords, but by no means its numbering. In short, he will find an inexhaustible source of instruction and observation in turning it over in every sense.

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* To *prepare* a dissonance is to give to the ear as consonant the interval which in the following chord will become dissonant. The preparation ought always to equal in virtue, and consequently in length, the duration of the dissonance. To *resolve* or *save* a dissonance is to lower it a whole tone or half a tone. In the dissonant chord of second, it is the lower note which ought to descend; and in those of fourth and seventh, it is the superior.

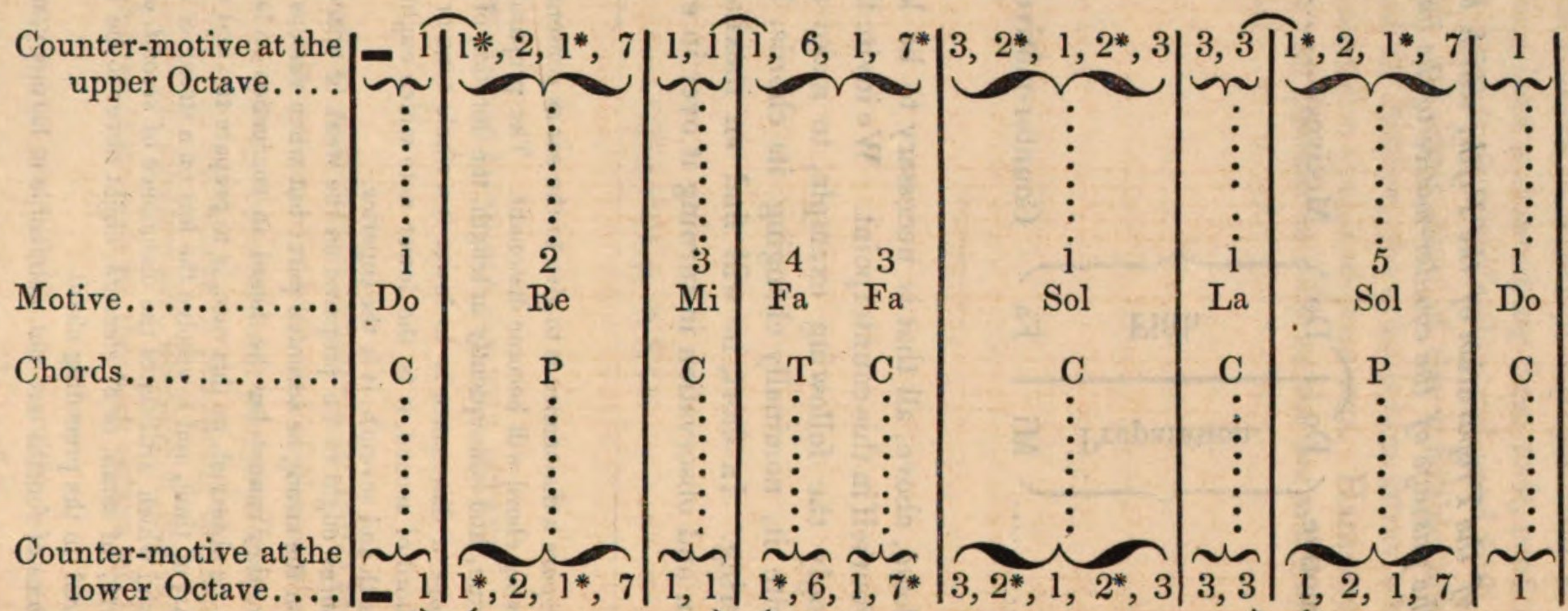
Dissonances ought to be prepared on the weak or unaccented parts of time, and heard on the strong or accented part; but when various dissonances succeed one another, they cannot but be heard in succession on both parts of the time. What is to be observed, in this case, is to prepare the first dissonance on an unaccented part of time, and to resolve the last on a strong or accented part.

The sound which articulates the dissonance of *second*, or that of *seventh*, or that of *fourth*, of *ninth*, or of *eleventh*, ought never to be heard without having been prepared in the preceding chord.

Successions of fourths are not admissible in harmony, unless the lower sixth be added.

Example of Counterpoint doubled at the Octave.

With the counter-motive at the upper octave or upper voice, and at the lower octave or lower voice; the counter-motive and the motive being the same in both cases.



Example.

Counter-motive at the Upper Octave.

Motive.

The same Motive.

Counter-motive at the Lower Octave.

Thorough, Fundamental, or Typometric Bass.

In comparing this noted example with its numbering, we observe at the first glance a difference in the fourth, the sixth, and seventh bar. We have no doubt but the study of the Geneuphonic Grammar, as far as we have now reached, has enabled our readers to explain perfectly these differences; and it is not only for the small number of those who are not capable of accounting for them, but to aid and guide the reflections of all, that we deem it proper to present the following observations.

We shall begin, then, with an entreaty to the reader to make himself complete master of the important rules he has perused in § 11, Chap. III; § 22, Chap. VI; §§ 24, 25, 26, 27, 28, Chap. VII; § 38, Chap. VIII; §§ 44, 45, and 46, Chap. IX, of the present Treatise.

Possessed of these rules and acquainted with these facts, let us examine bar by bar the example written both in letters and music at pages 218 and 219. *The first three bars* are similar in the one and the other, and follow the regular alternation of cadence, precadence, and cadence of *Do*. *Fourth Bar:* The numbered example bears the transcadence of *Do*, and the noted example, the cadence of *Fa*. We know that these two chords make only one of them. The transcadence of *Do* may naturally come after the cadence of this key. *Second part of time.* The two examples bear the cadence of *Re*. This cadence comes with propriety after the cadence of *Fa*, with which it has two notes in common; having just seen that the cadences of the *tonic* and of the third are *imperfect* cadences one of the other, and because the cadence of *Fa* is the semi-precadence of its sixth, *Re*. *Fifth bar:* Cadence of *Sol* in the numbered example, as well as in the noted one. This cadence of *Sol* comes so much the better from being preceded by its precadence; viz. the cadence of *Re*, which occupies the second part of time of the preceding bar, being the imperfect precadence of its fourth *Sol*. *Sixth bar:* The numbered example bears the cadence of *La*, because this cadence is preceded by the cadence of *Sol*, which is its imperfect precadence (always raising the *Sol* a semitone): and the noted example bears the cadence of *Fa*, which, being the imperfect precadence of *Sol* (always raising the *Fa* a semitone), is therefore preceded and followed by its cadence. Here you also find, as in the fourth bar, the affinity of the *tonic* with the third. *Seventh bar:* The numbered example bears the precadence of *Do;* the noted example, the cadence of *Sol;* these two chords consequently making but one. The inviolable law, "that the last chord but one should be the precadence of the reigning key," is equally observed, under whatever name this chord may be

presented, in whatever form it may be given, or in whatever way you have it, provided it be not corrupted. In the noted example, we have called this chord the *cadence* of *Sol ;* because it is the precadence of *Sol* which precedes. In the numbered example it is called the *precadence* of *Do ;* because it is the cadence of *Do* which follows. We have always been consistent with ourselves. Our system is without an exception, and admits of no licence ; it is uniform, it is one : *it inculcates only a single principle ; but it is that of truth**.

We have nothing to add on the subject of this example ; and as we consider that the reader is already sufficiently instructed and expert in the exercise of noting the examples, and even every piece of music whatever according to the geneuphonic numbering, we shall from this moment abstain from numbering the examples of the other counterpoints which remain for us to explain.

CHAPTER XXV.

EXPLANATION OF THE EXAMPLES OF VARIOUS COUNTERPOINTS.

§ 86. The following example presents the same *double counterpoint at the upper octave*, with the addition of an internal complementary voice.

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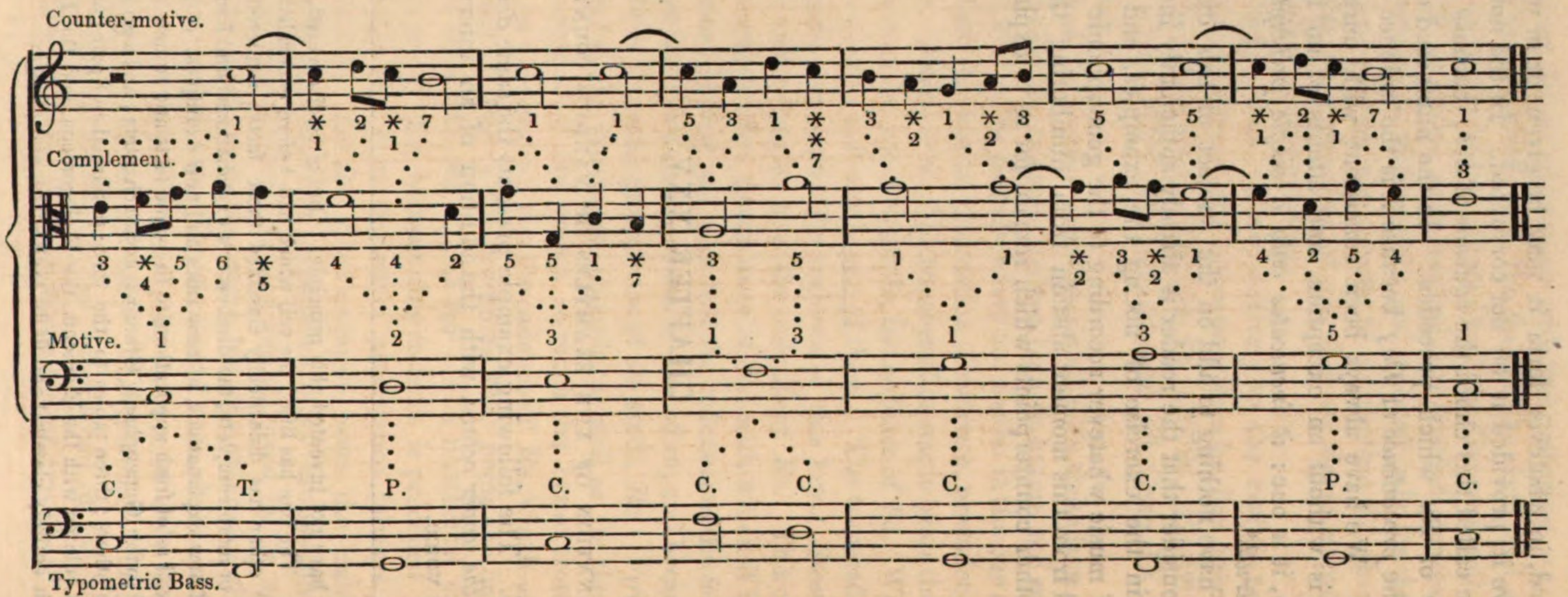
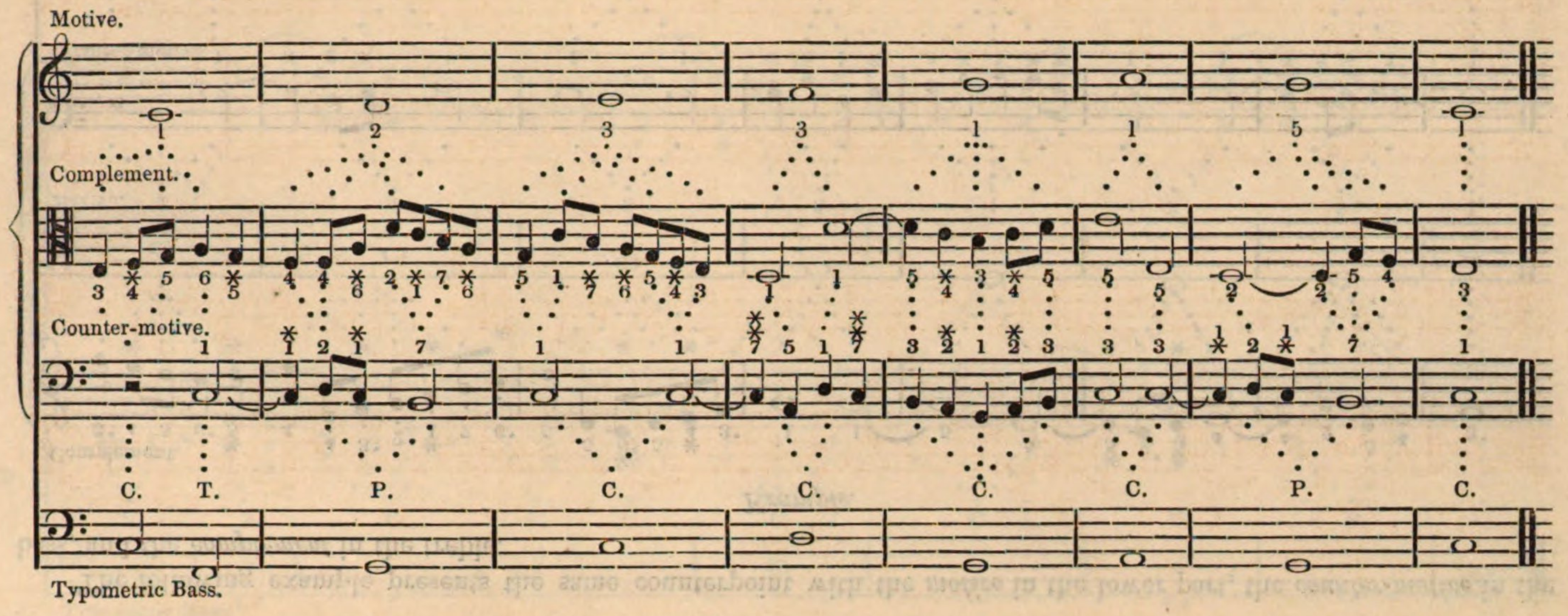
* We have not invented this principle. One of us discovered, the other improved it. The one has lifted the veil which had before concealed the cause of facts : the other has didactically classified those facts ; rendered clearer, more luminous, or more complete, the discoverer's explanations ; and found out a great number of new explanations, of new rules and new examples, of new observations, as well as of fresh applications to the same facts and to new ones. He has also added to the Geneuphonic Grammar entire chapters ; and a great many entire sections to others ; three tables to the three published in Spain ; and he has enriched this volume with the Elements, the Prolegomena, and the Index, in order to render it entirely classical and fit for both sexes, and all ages.

Example.


Counter-motive.
Complement.
Motive.
C. T.
P.
C.
C.
C.
C.
C.
P.
C.
Typometric Bass.

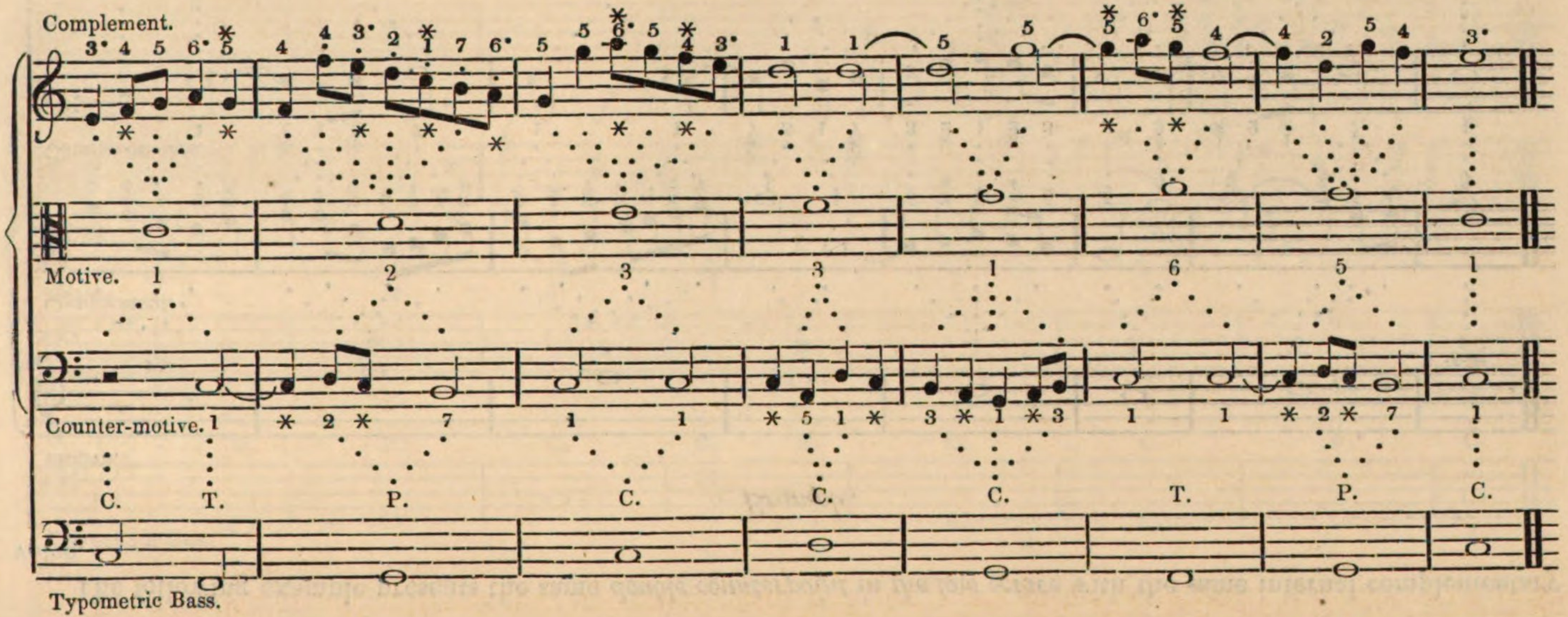
The following example presents the same *double counterpoint in the low octave* with the same internal complementary voice.

Example.



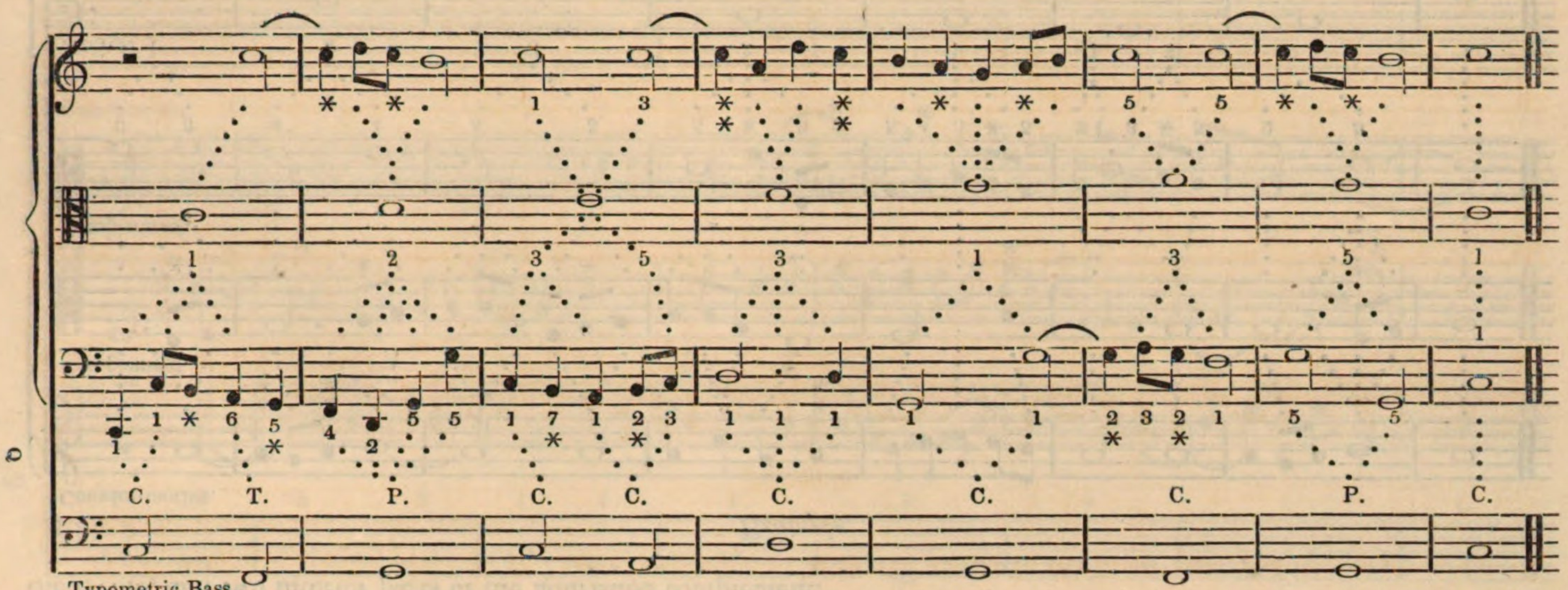
The following example presents the same counterpoint with the *motive* in the lower part, the *counter-motive* in the bass, and the *complement* in the treble.

Example.



The following example presents the same counterpoint with the *motive* in the inner part, the *counter-motive* in the treble, and the *complement* in the bass.

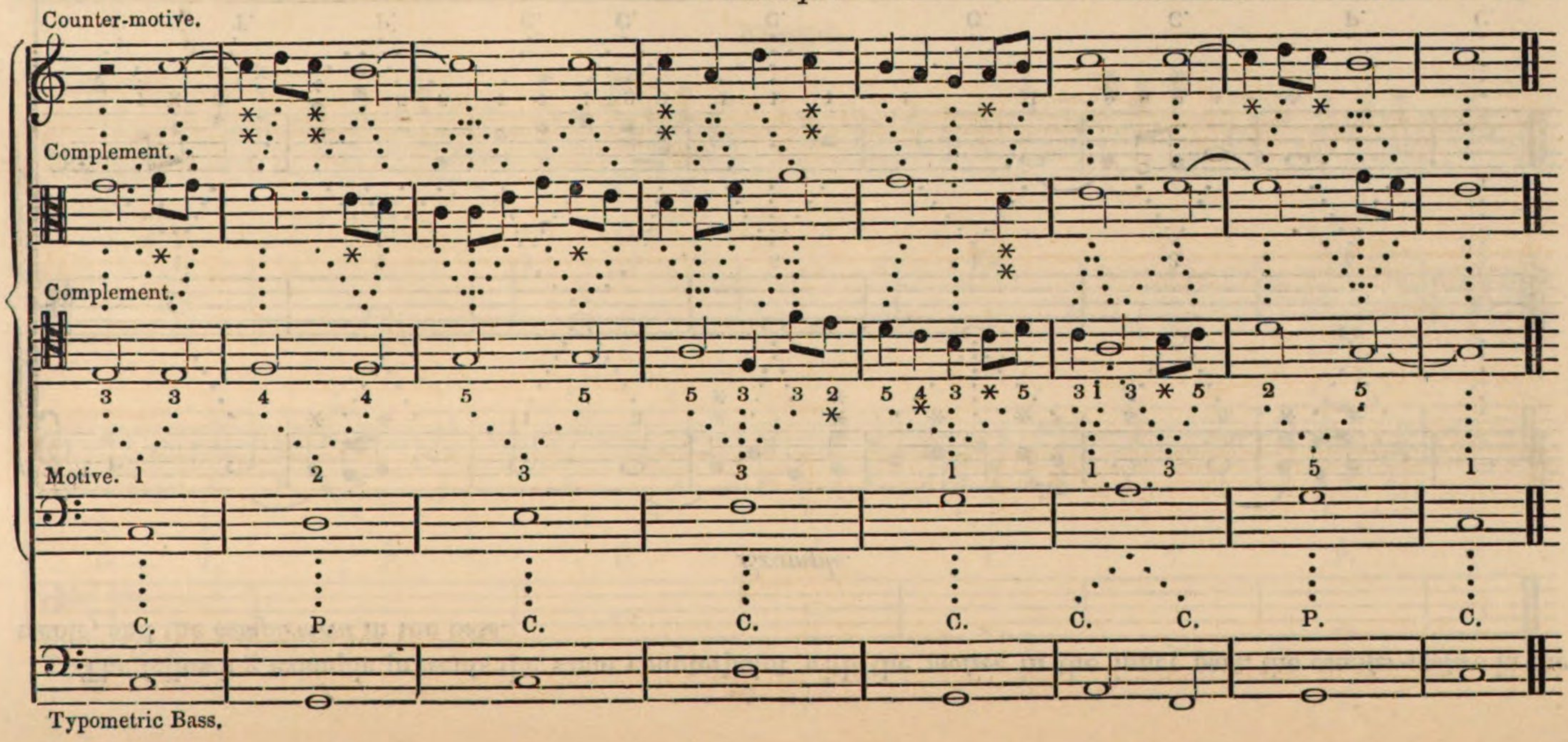
Example.



Typometric Bass.

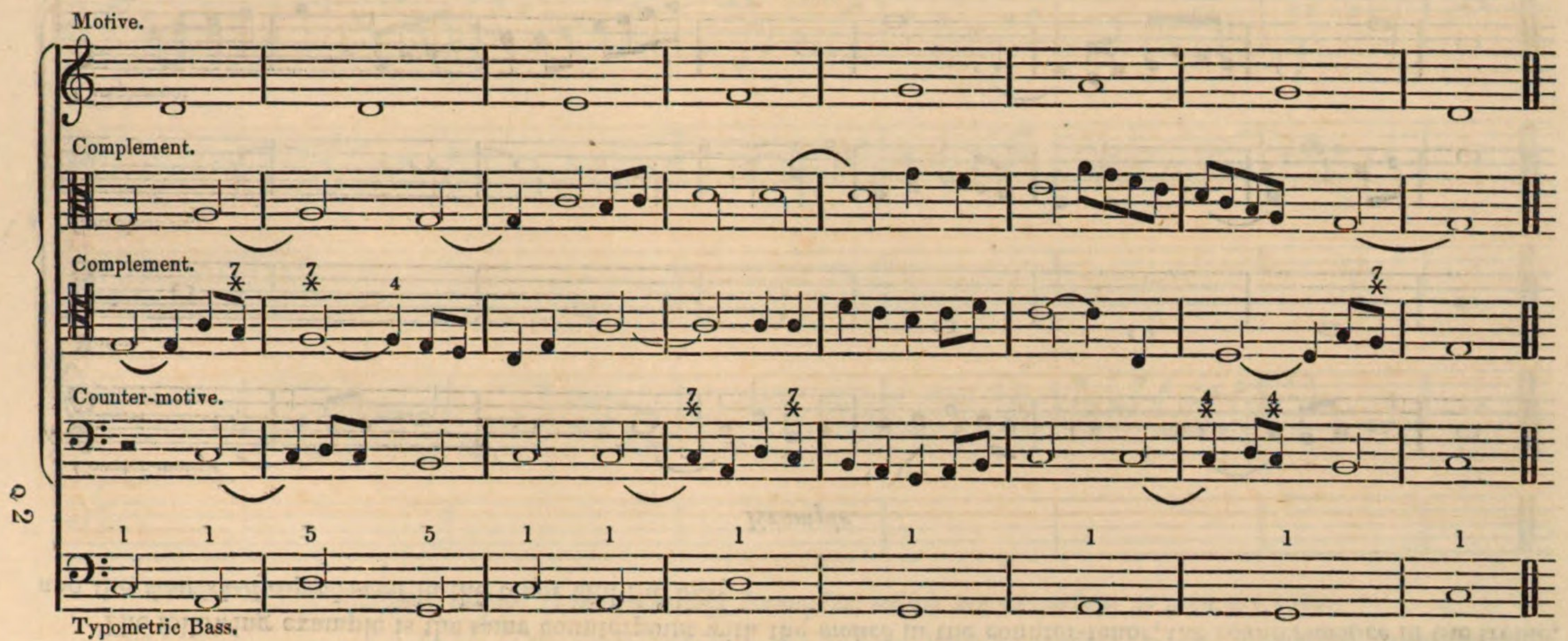
The following example presents the same counterpoint in a quartet, with the *motive* in the bass, the *counter-motive* in the treble, and two interior parts of the flourished complement.

Example.



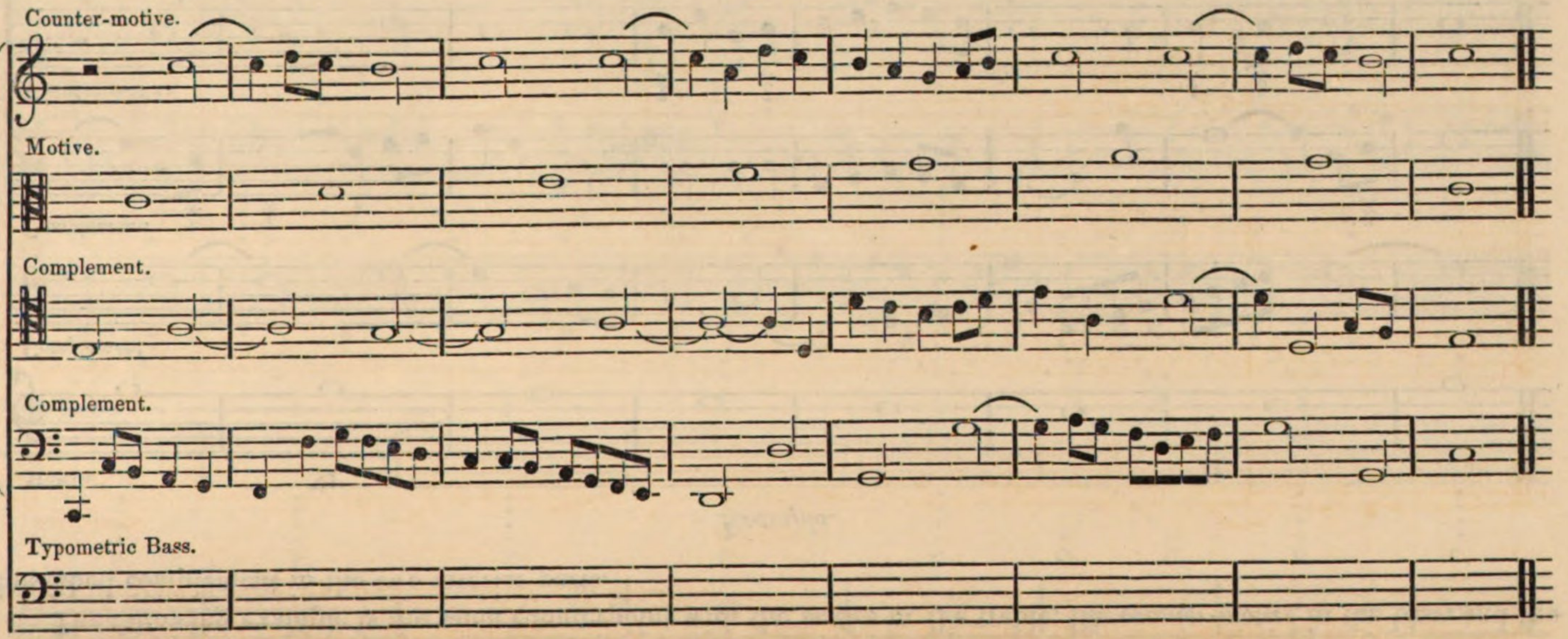
The following example is the same counterpoint with the *motive* in the treble, the *counter-motive* in the bass, and the flourished complement in the two interior parts.

Example.



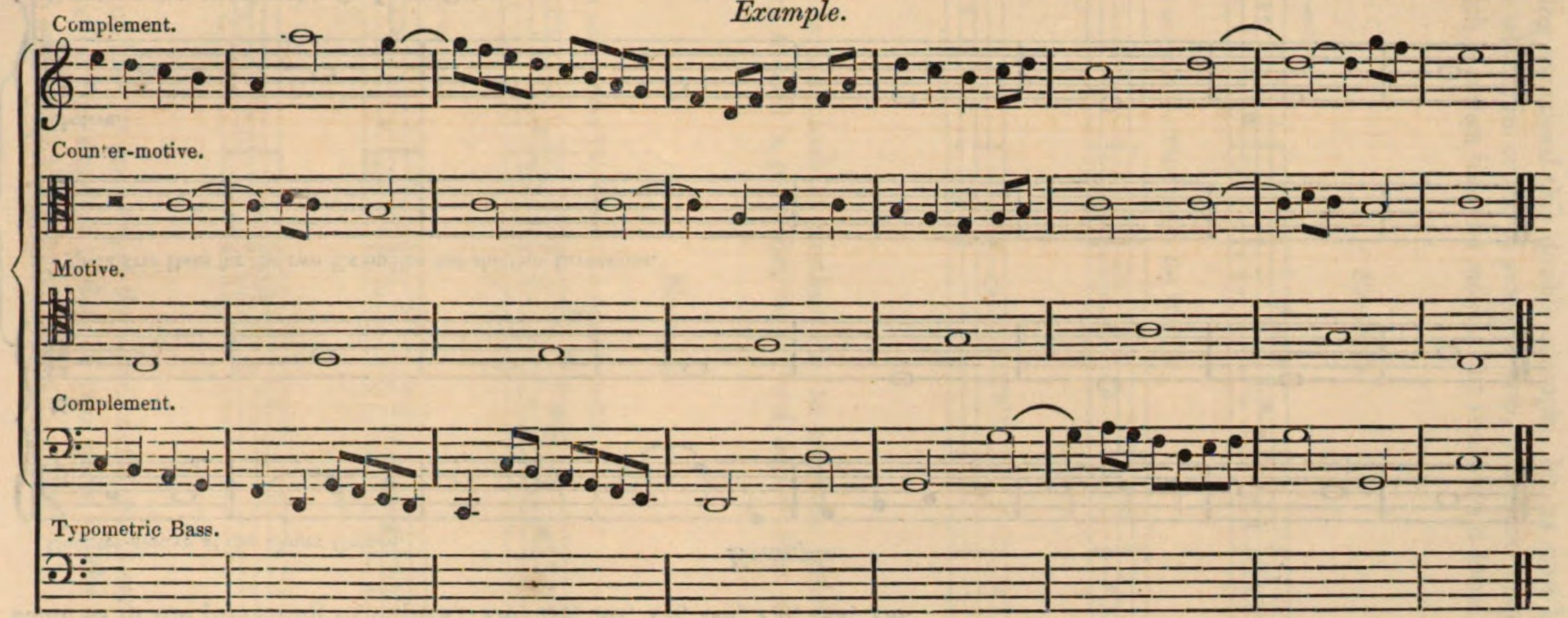
The following example is the same counterpoint with the *motive* in the counter-tenor, the *counter-motive* in the treble, and the *flourished complement* in the tenor and the bass.

Example.



The following example is the same counterpoint with the *motive* in the tenor, the *counter-motive* in the counter-tenor, and the *flourished complement* in the treble and the bass.

Example.

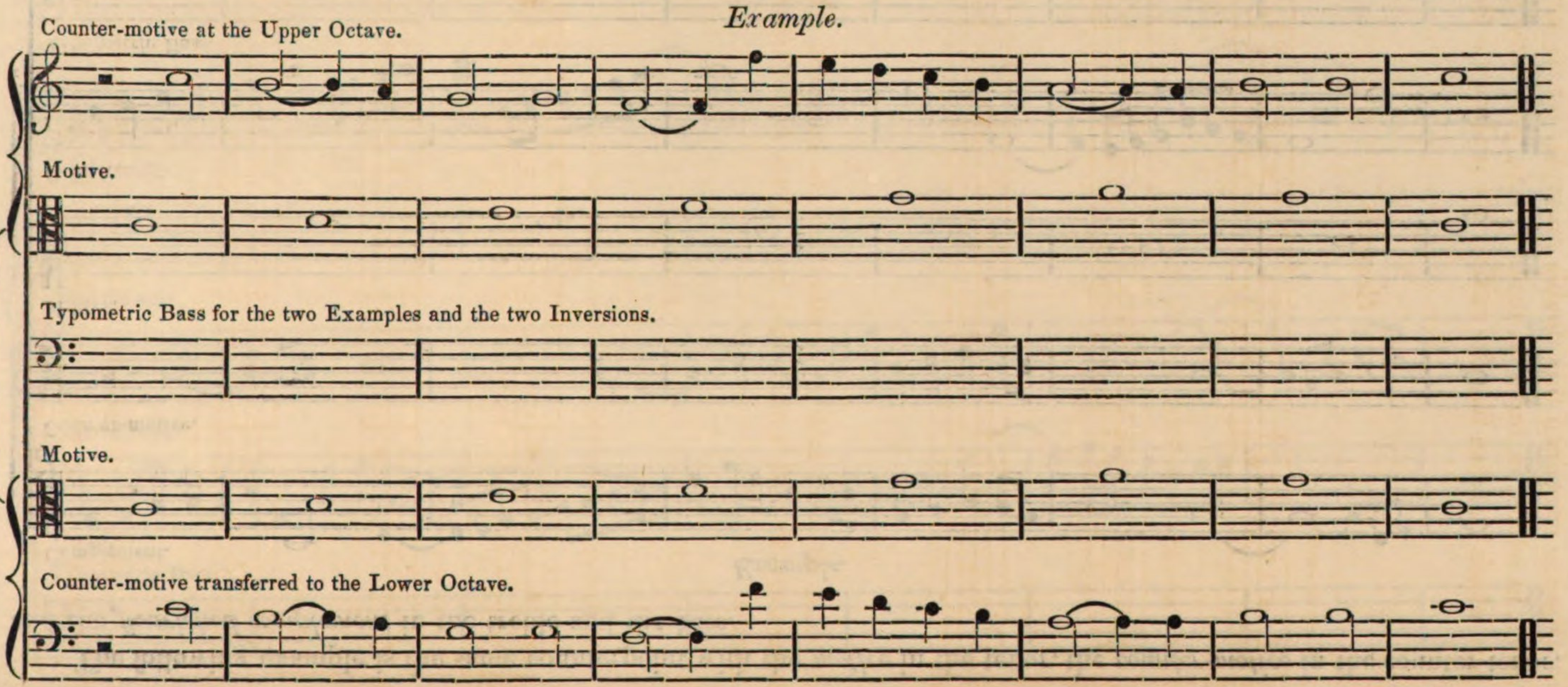


A Notice with respect to the following Examples, which are as curious as they are easy.

§ 87. The *counterpoint double at the octave,* which is the one we have just given in the preceding examples, produces another extremely graceful effect; a specimen of which the reader will find in the following examples. To obtain

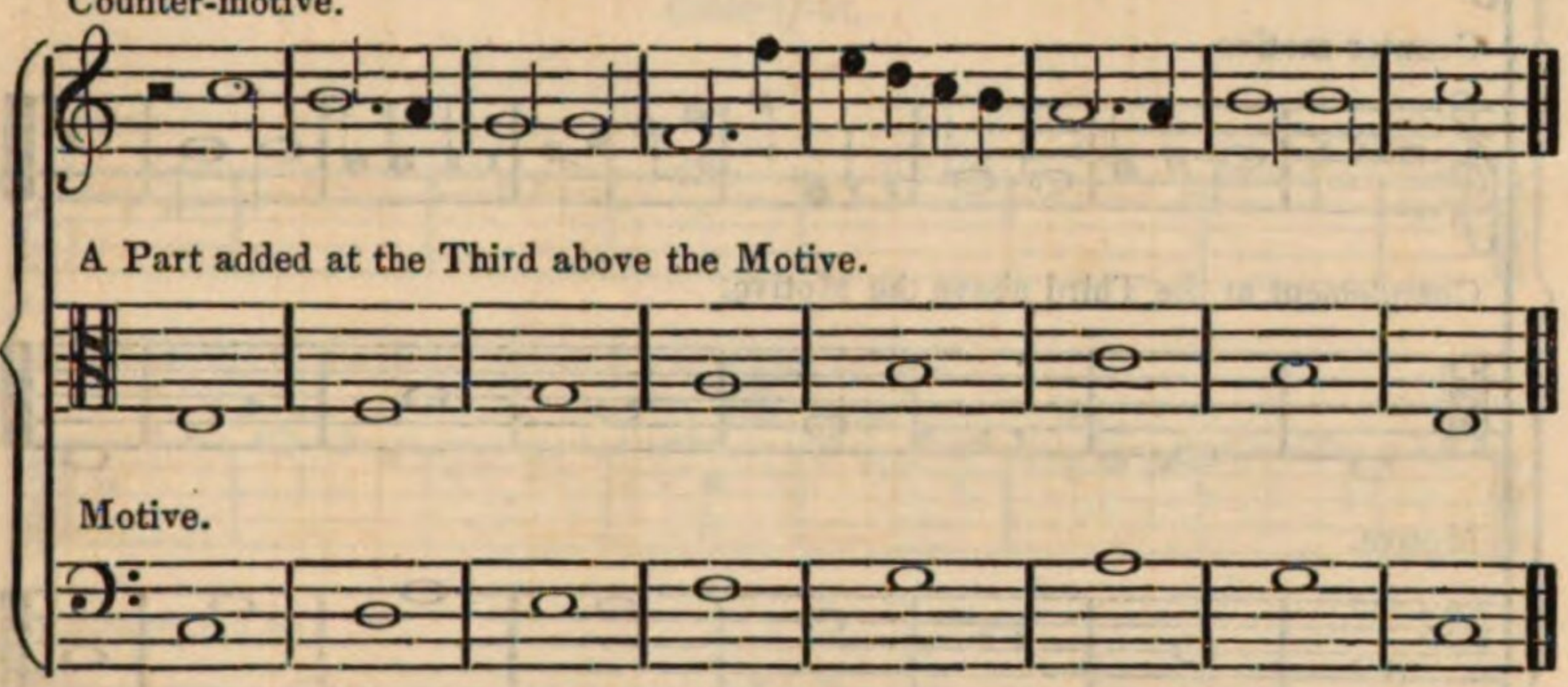
this effect, it is necessary to make a *counter-motive,* which invariably marches in a sense contrary to the *motive;* i. e. the one falls when the other rises, and *vice versâ,* without employing, either in the one or the other, syncopes or dissonances. Before you proceed further, look at this new counterpoint in the treble as well as in the bass. The motive is always the same as in the preceding examples: *Do, Re, Mi, Fa, Sol, La, Sol, Do.*

Example.



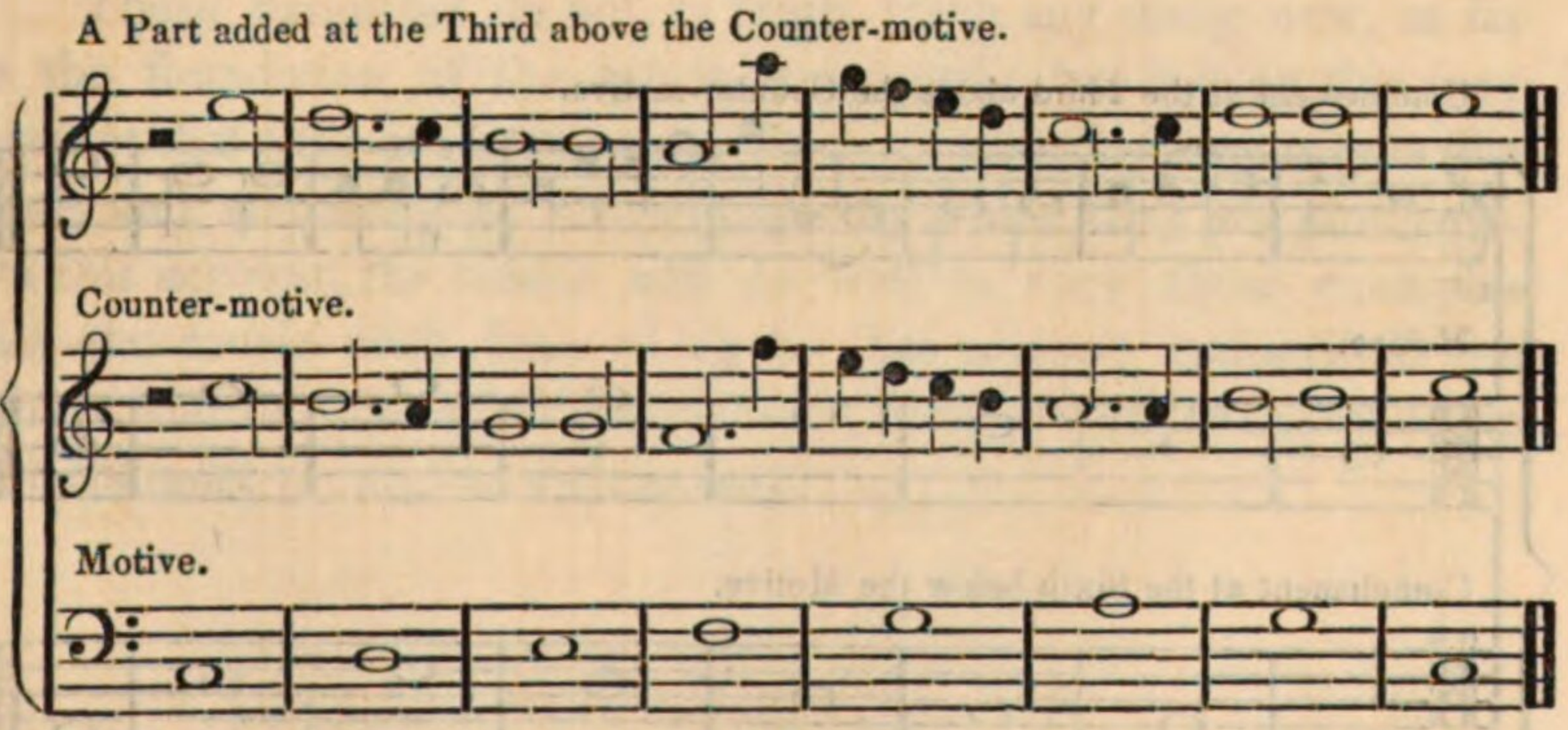
Having examined this double example, let us now look at another, in which, in order to make a *trio*, you have only to add a part which marches like the *motive*, but is always *a third higher*.

Example.



Let us next look at another *trio*, to compose which it is only necessary to add a part that is *a third higher than the counter-motive.*

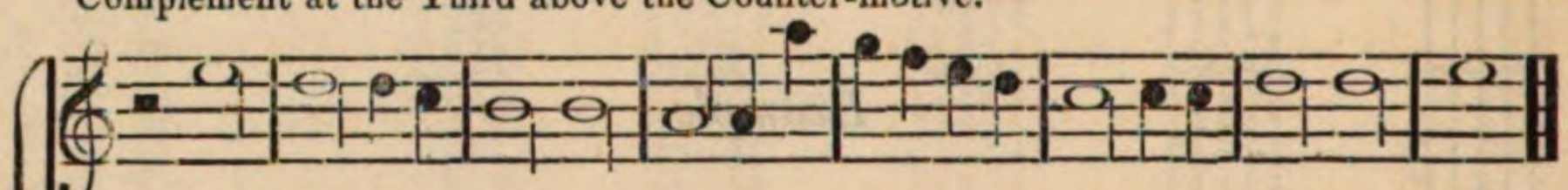
Example.



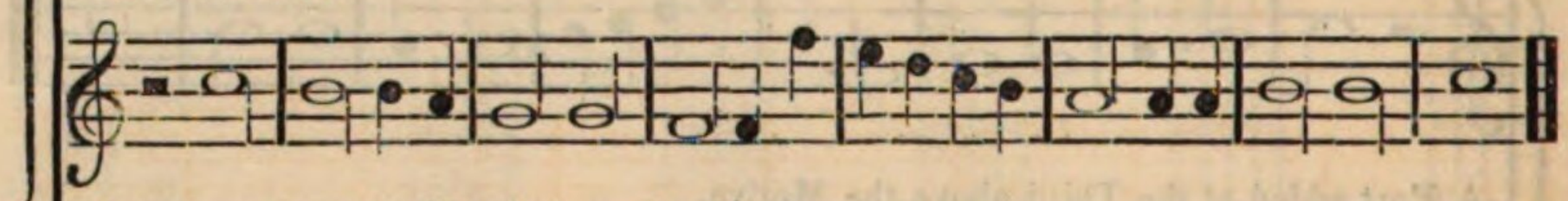
Let us look, at present, at the same counterpoint converted into a *quartet* by the single addition of two parts *in the upper third* with the *motive* and the counter-motive.

Example.

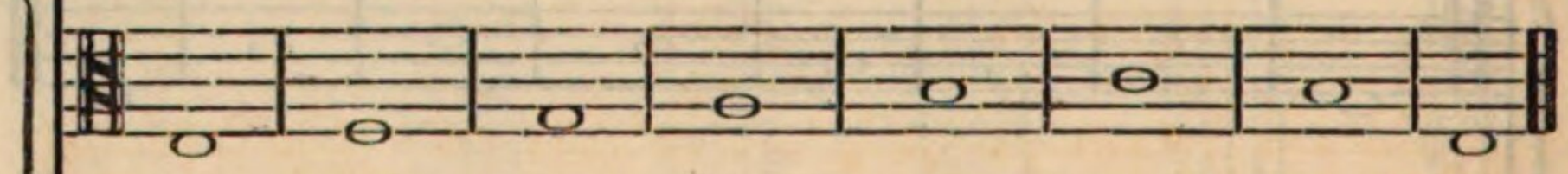
Complement at the Third above the Counter-motive.



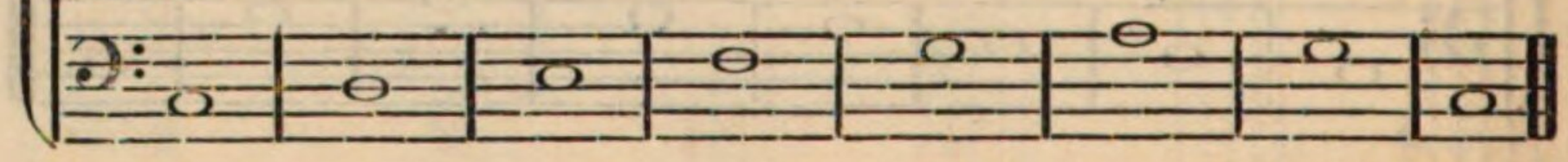
Counter-motive.



Complement at the Third above the Motive.



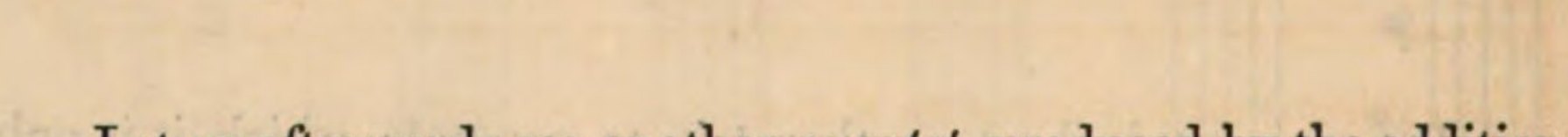
Motive.



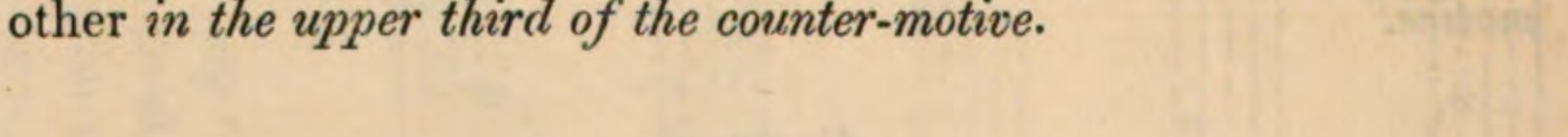
Let us afterwards see another *quartet*, produced by the addition of only two parts ; the one *in the lower sixth of the motive*, and the other *in the upper third of the counter-motive.*

Example.

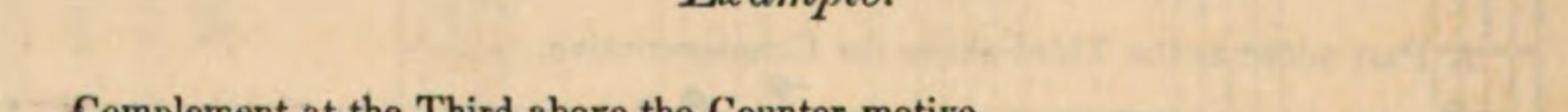
Complement at the Third above the Counter-motive.



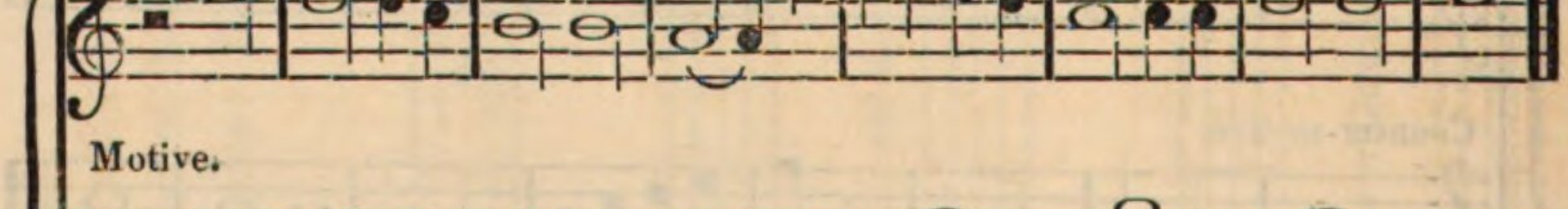
Motive.



Complement at the Sixth below the Motive.

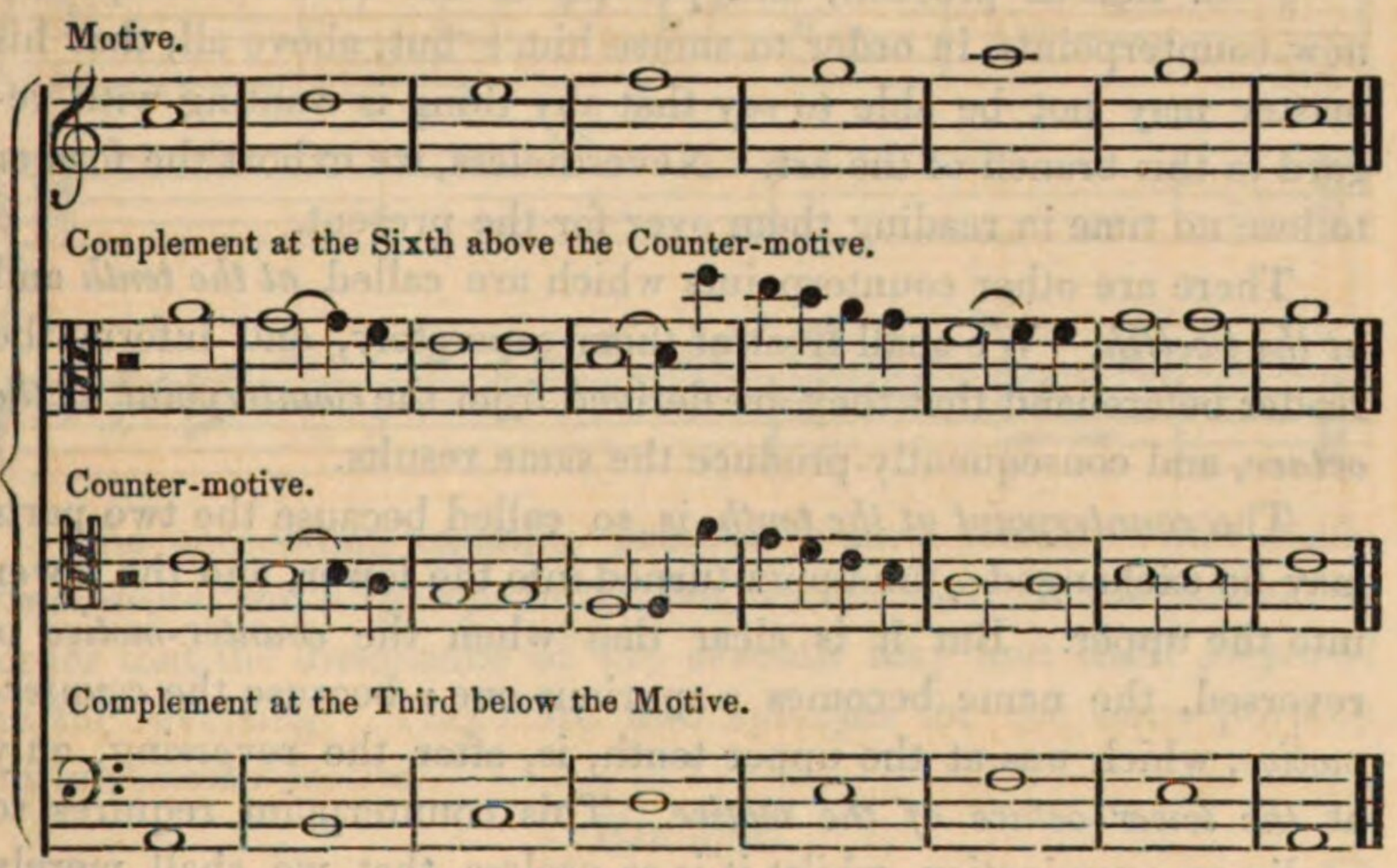


Counter-motive.



In the following example we shall also see another *quartet*, equally obtained by simply adding two parts, the one *in the inferior third of the motive*, and the other in the upper sixth of the *counter-motive*. This *quartet* is in the key of *La♮* minor.

Example.



These curiosities do not, in truth, teach any thing new, as far as the foundation of the art is concerned; but it is on this very account that they are interesting, by confirming by new results the truth and simplicity of the principle by which they are produced. On this account, the reader will do well to copy these examples into the music book into which he has already transcribed the others, and to number all the notes, in order to render the evidence of facts more prompt as well as easy.

CHAPTER XXVI.

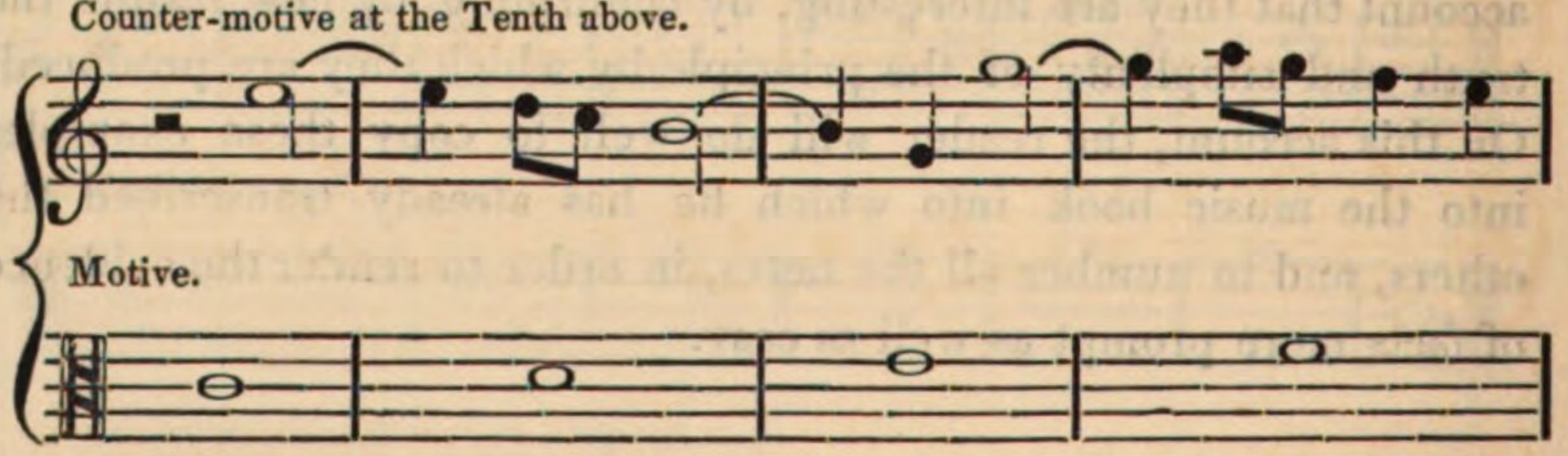
COUNTERPOINTS AT THE TENTH AND AT THE TWELFTH, AND QUADRUPLE COUNTERPOINT AT THE OCTAVE.

§ 88. Let us proceed, and present to the reader examples of new counterpoints, in order to amuse him; but, above all, that his master may not be able to say that any thing is wanting with regard to this branch of the art. Nevertheless, we exhort the former to lose no time in reading them over for the present.

There are other counterpoints which are called *at the tenth* and *at the twelfth*. We shall treat of them separately, and inform the reader beforehand that they are derived from the *counterpoint at the octave*, and consequently produce the same results.

The *counterpoint at the tenth* is so called because the two parts may be exchanged—the upper turned into the lower, and the lower into the upper. But it is clear that when the *counter-motive* is reversed, the name becomes a spurious one; because the *counter-motive*, which was at the upper tenth, is, after the reversing, only at *the lower octave of the motive*. This counterpoint requires so prolix an examination, whilst it is so useless, that we shall merely give examples of it.

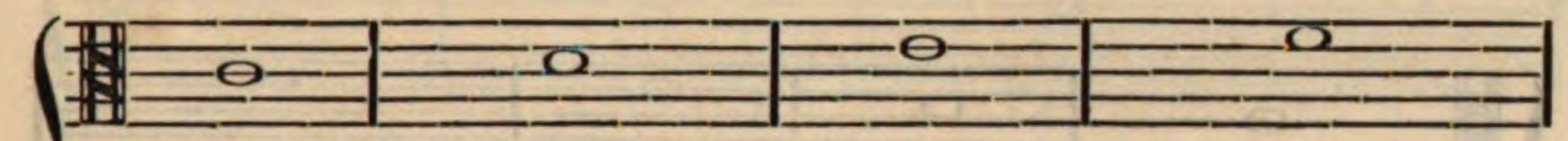
The Model of a Counterpoint at the Tenth above.



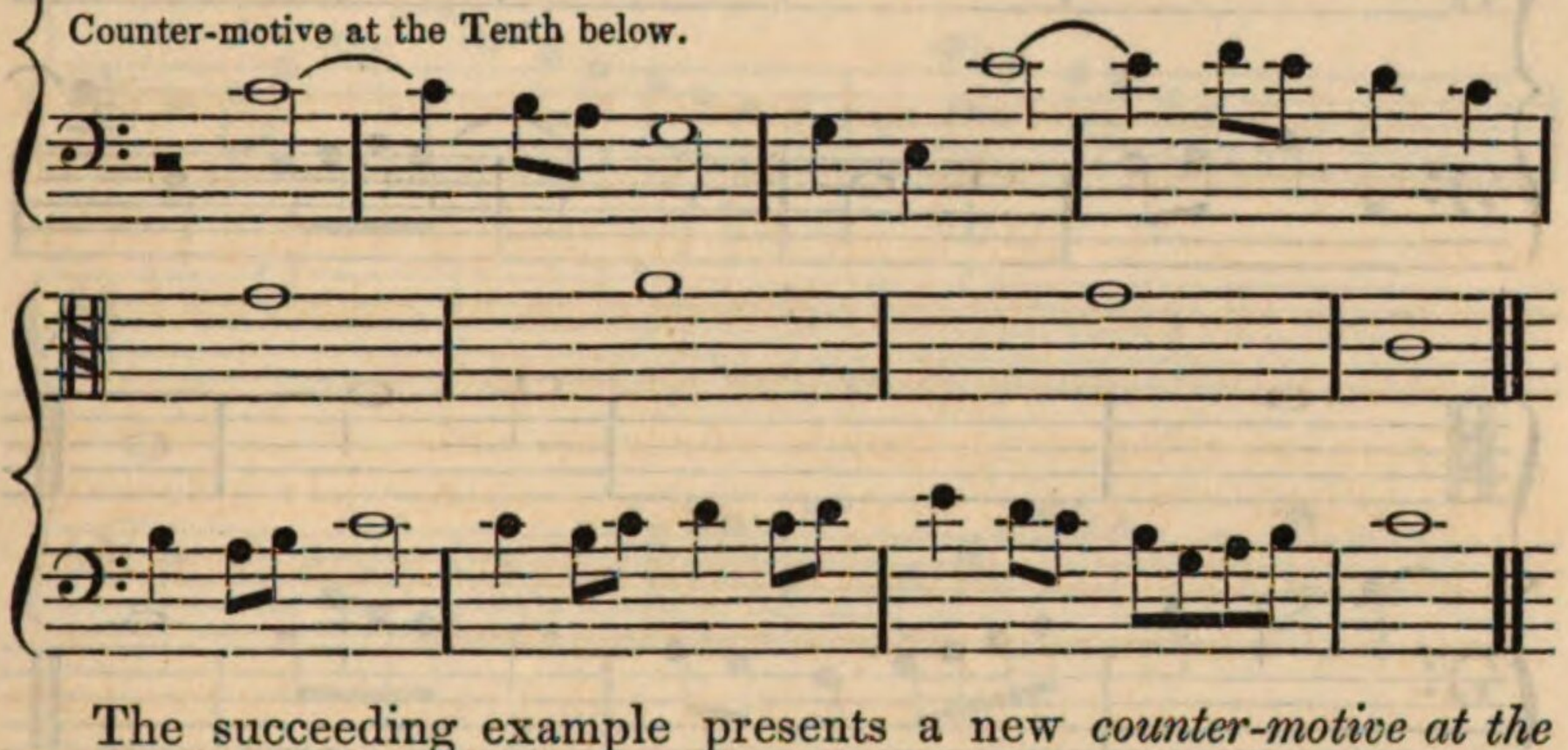
The following example presents the inversion of the preceding one.

The Inversion of the Counterpoint at the Tenth.*

Motive.

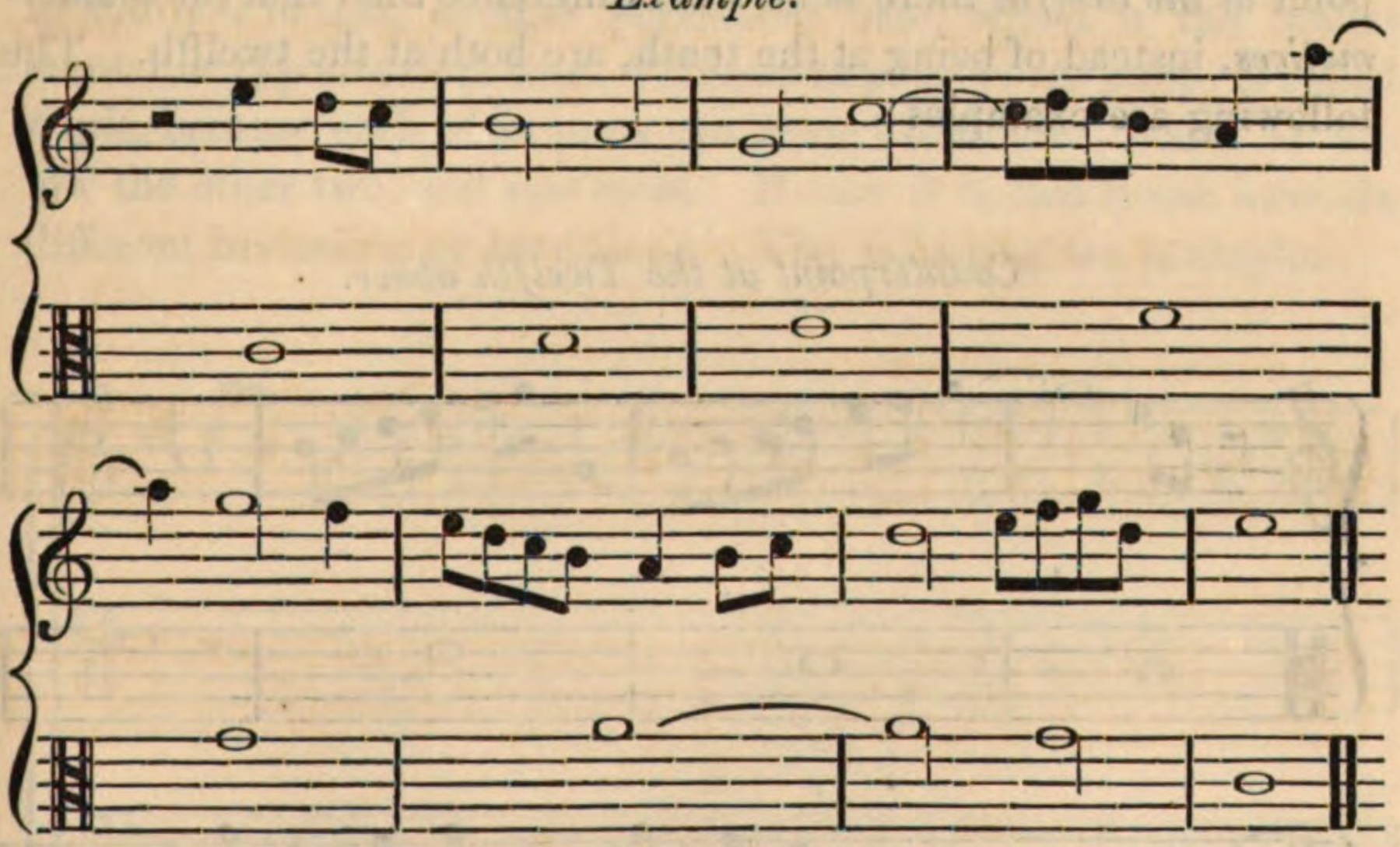


Counter-motive at the Tenth below.



The succeeding example presents a new *counter-motive at the tenth above*, and a *syncope* in the last bar but one of the *motive*, in order that the dissonance of the seventh may find itself *prepared* in the reversing. There are also *syncopes* for the same purpose in the *counter-motive*.

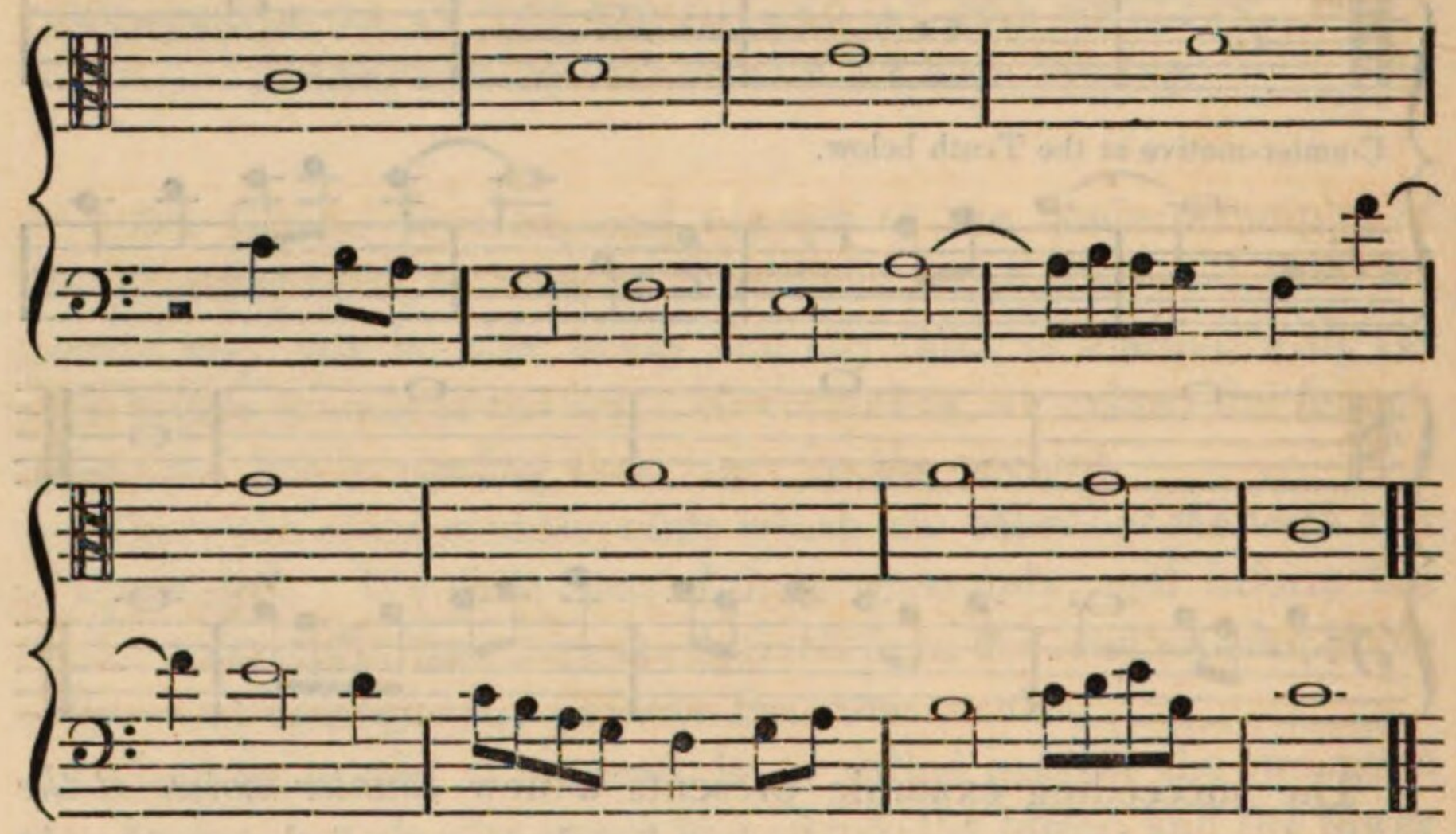
Example.



* This counterpoint is that which the ancient school calls *counterpoint at the tenth above;* but it is in reality only the *inversion* of the counterpoint *at the tenth above*, and, as the Author of the Geneuphony himself says, a counterpoint at the octave above the motive. It is only the two *counter-motives* which are *at the tenth*, the one of the other, whether superior as to that below, or inferior as to that above.

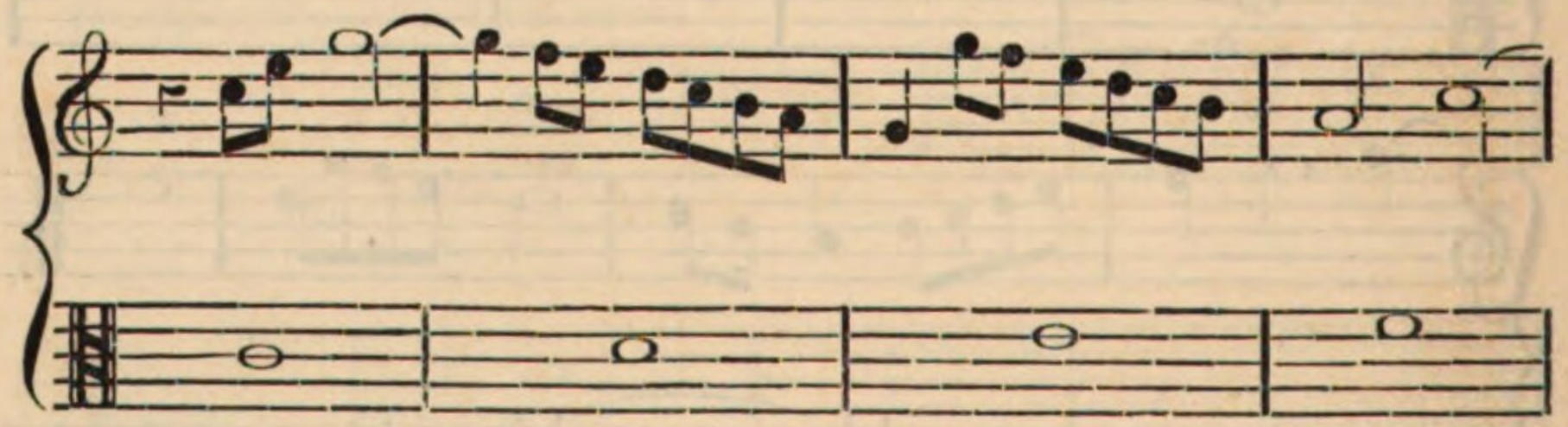
The following example exhibits

An Inversion of the preceding Counterpoint.

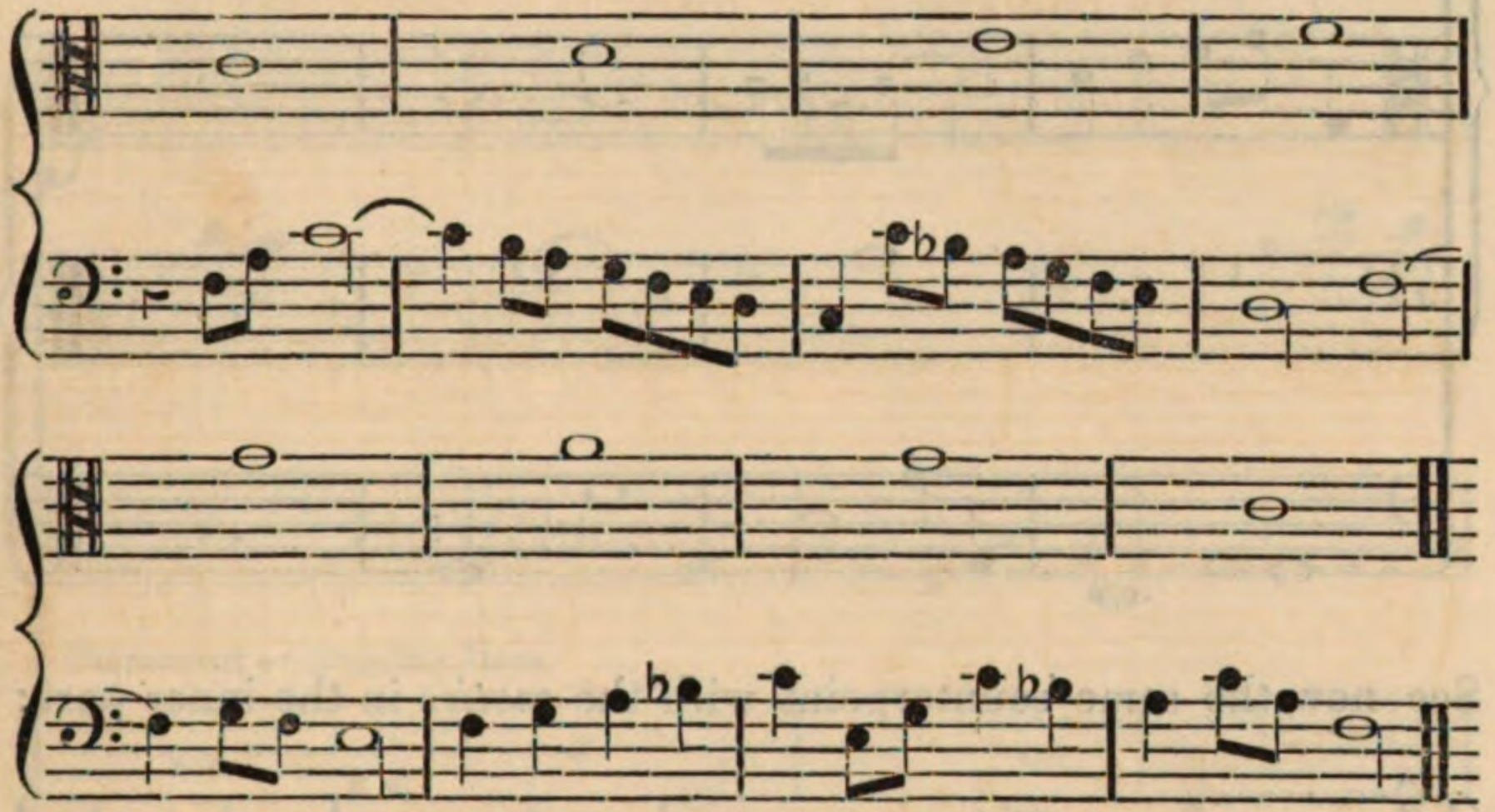


§ 89. Between the counterpoint *at the tenth* and the counterpoint *at the twelfth* there is no other difference than that the *countermotives*, instead of being at the tenth, are both at the twelfth. The following are examples:

Counterpoint at the Twelfth above.

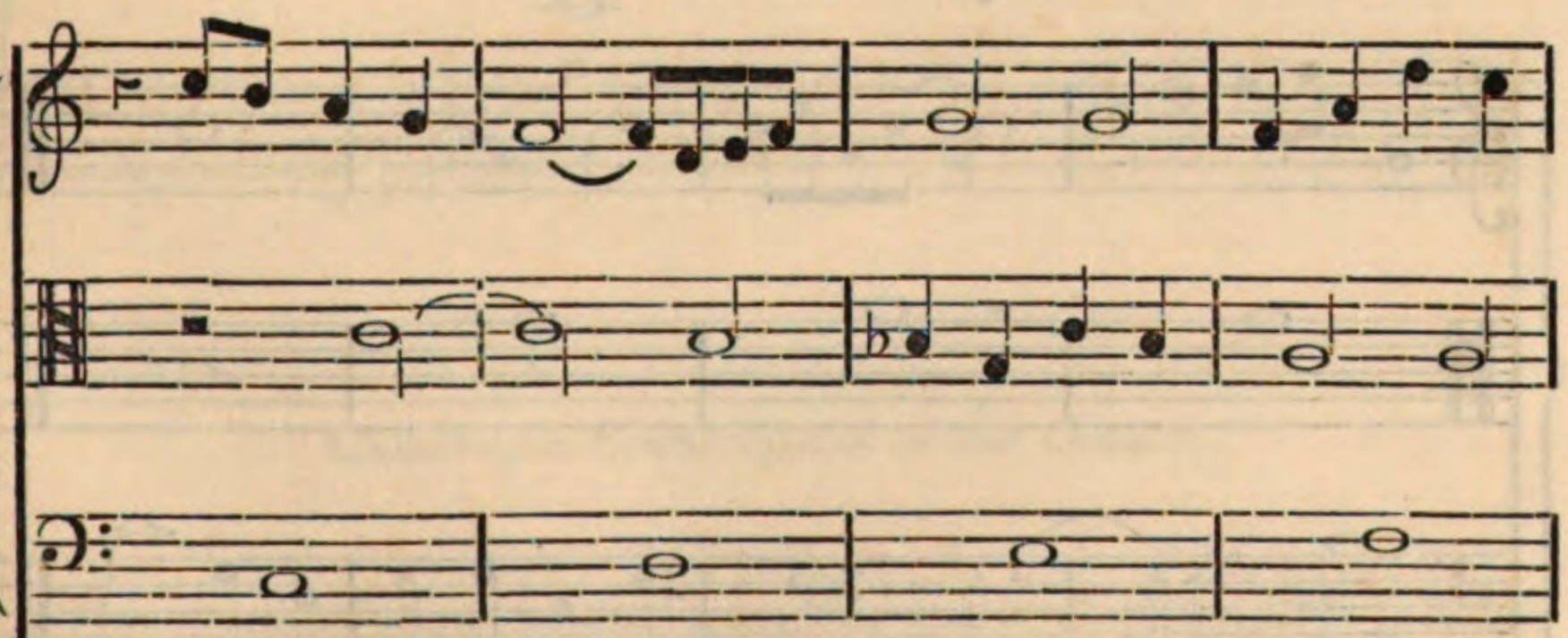


An Inversion of the preceding Counterpoint.

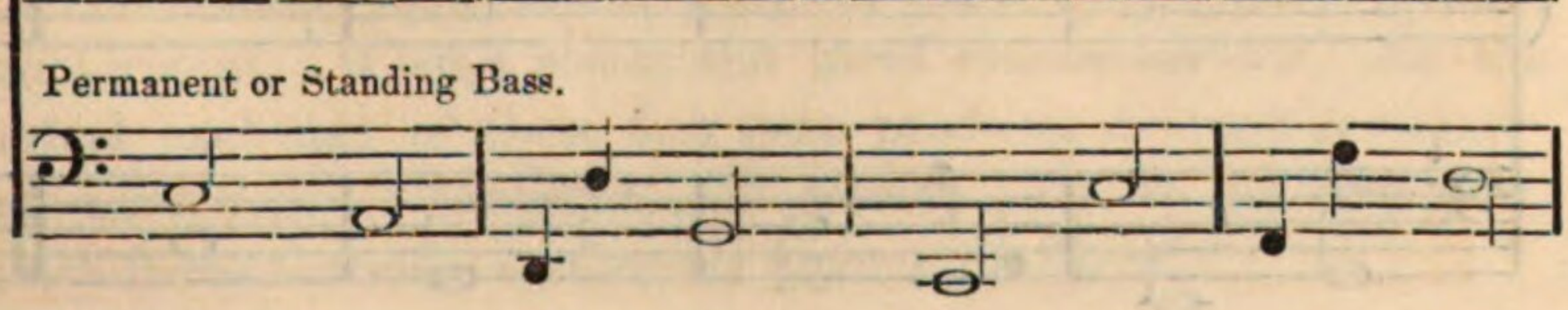


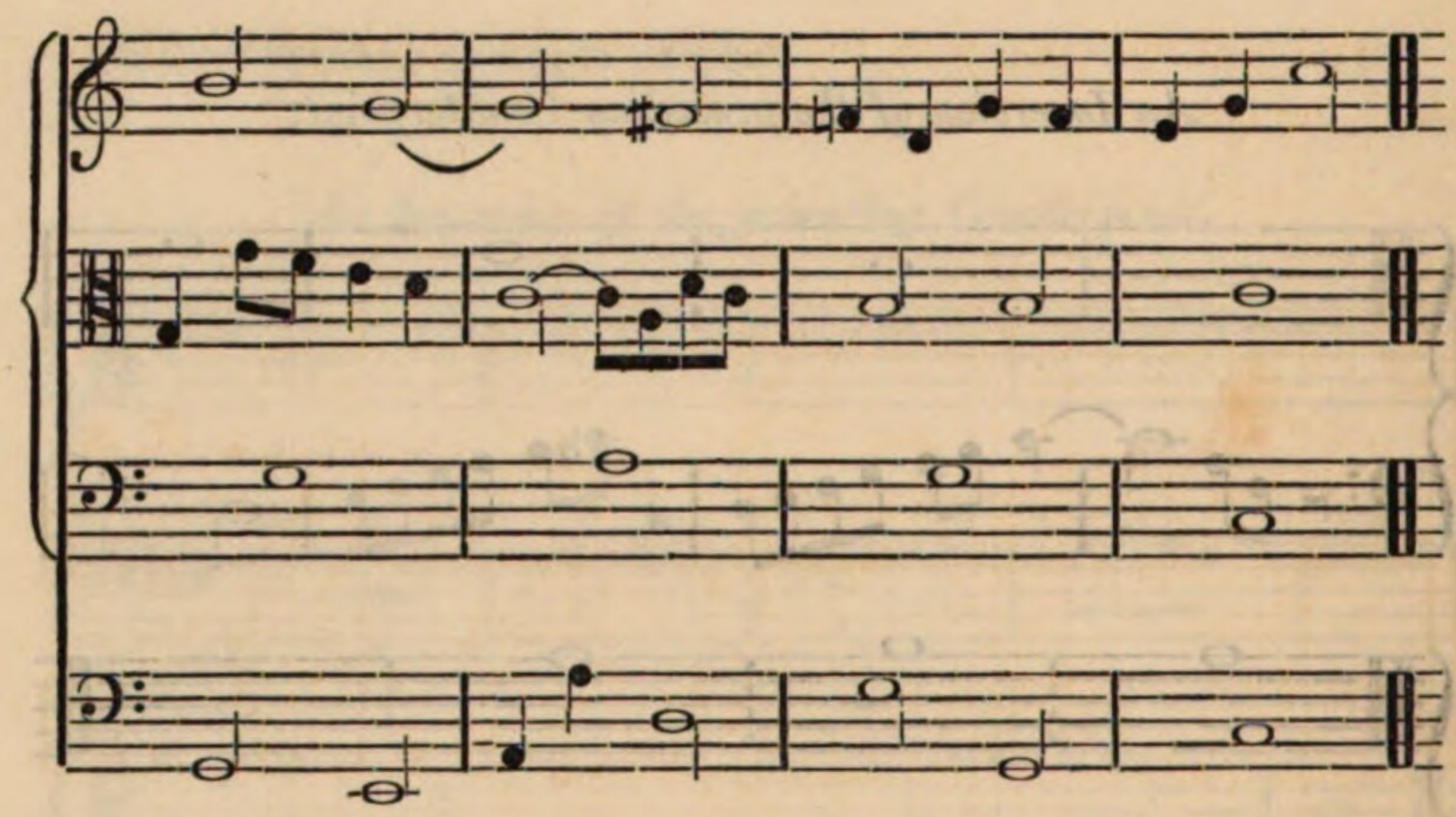
§ 90. *Triple and Quadruple Counterpoint in the Octave.*

The following example offers the model of a counterpoint at the octave with *two counter-motives* on the *same motive* in the bass, and, in addition to this, another permanent bass, which is the fundamental or typometrical bass. *This counterpoint in the octave* is called *triple*, because each of its parts can place itself either above or below the other two, and *vice versâ*. Hence it is that it can have six different inversions or reversions. The following are examples:

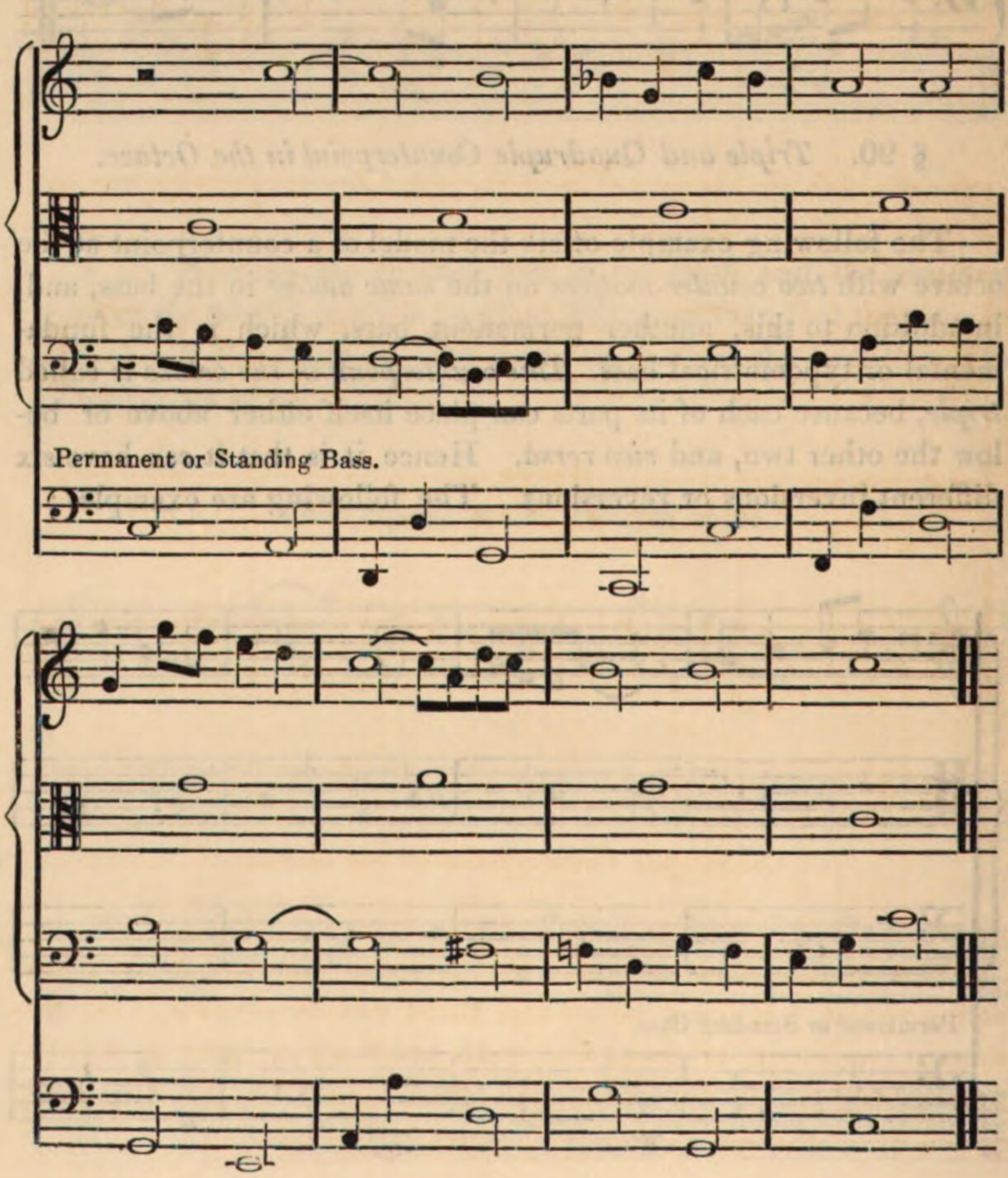


Permanent or Standing Bass.

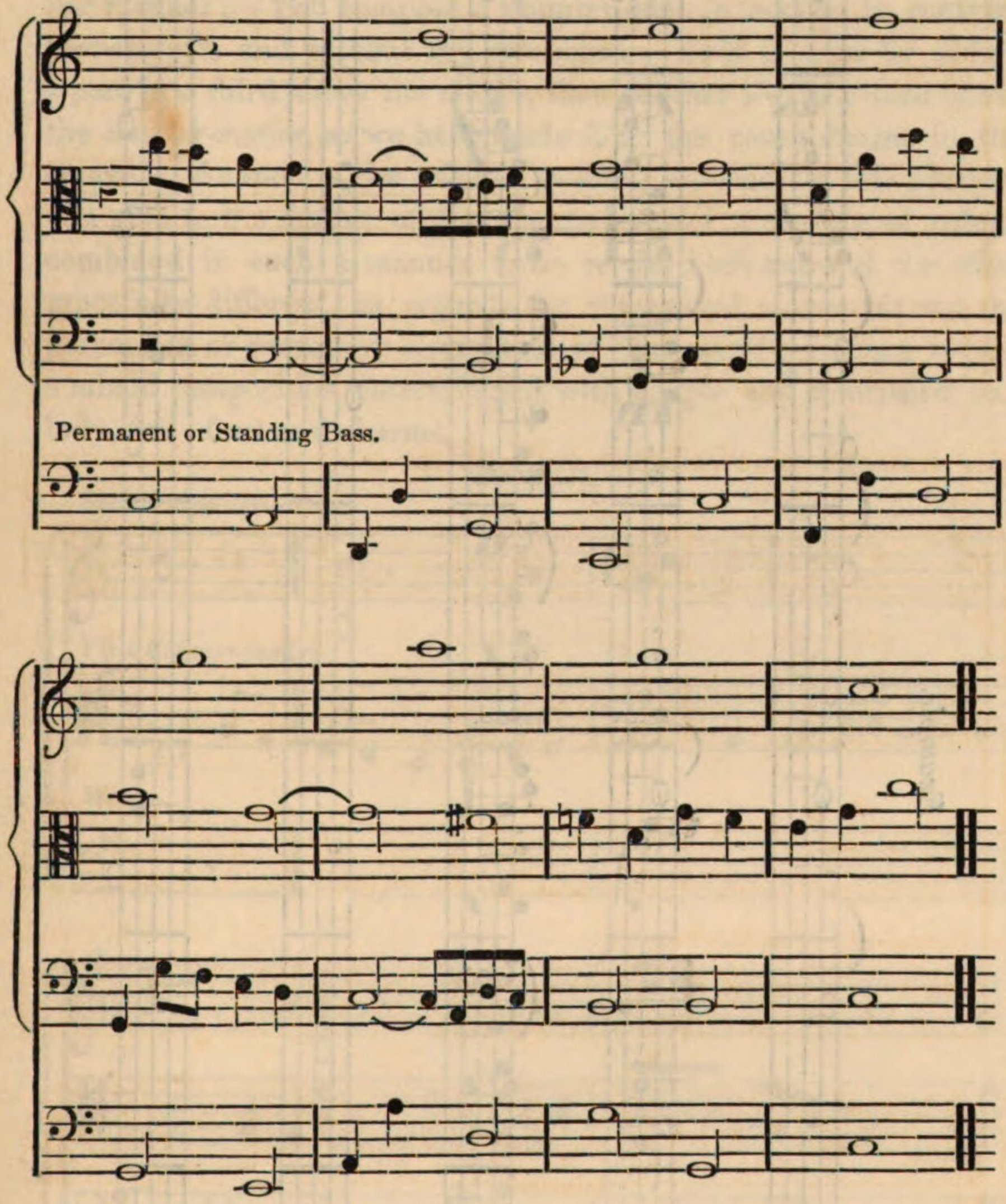




See now the same counterpoint with the *motive* in the inner part:



And still the same with the *motive* in the upper part; always the same typometrical bass, which does not change.

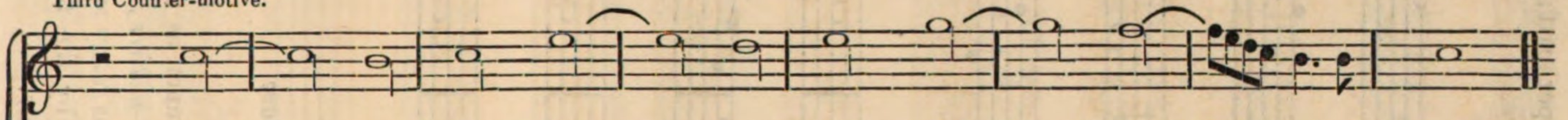


Quadruple Counterpoint at the Octave

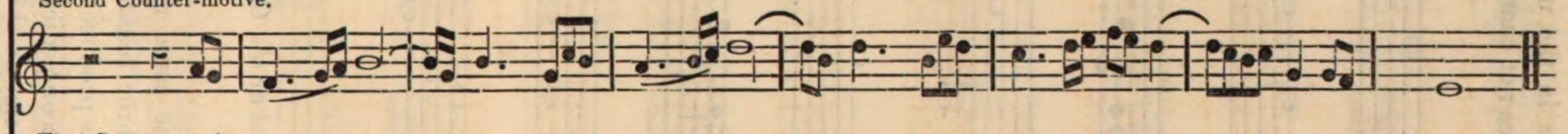
This counterpoint is made in the same manner as the triple counterpoint. It has a *motive* and three *counter-motives;* and the mutual exchange of these four parts produces as many as twenty-four inversions or reversions, all accompanied by the fifth part, which forms the same *unalterable* typometrical bass.

Example.

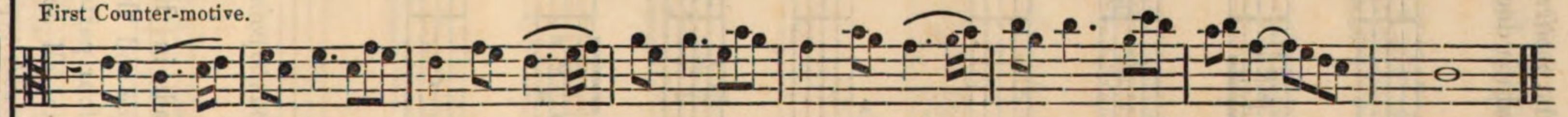
Third Counter-motive.



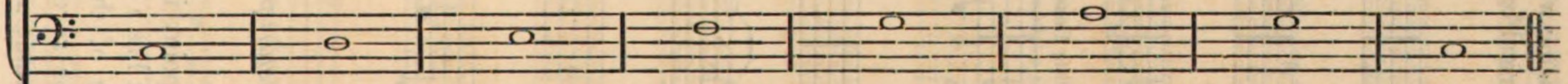
Second Counter-motive.



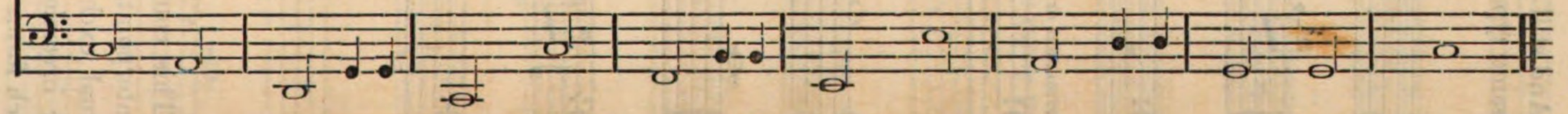
First Counter-motive.



Motive.



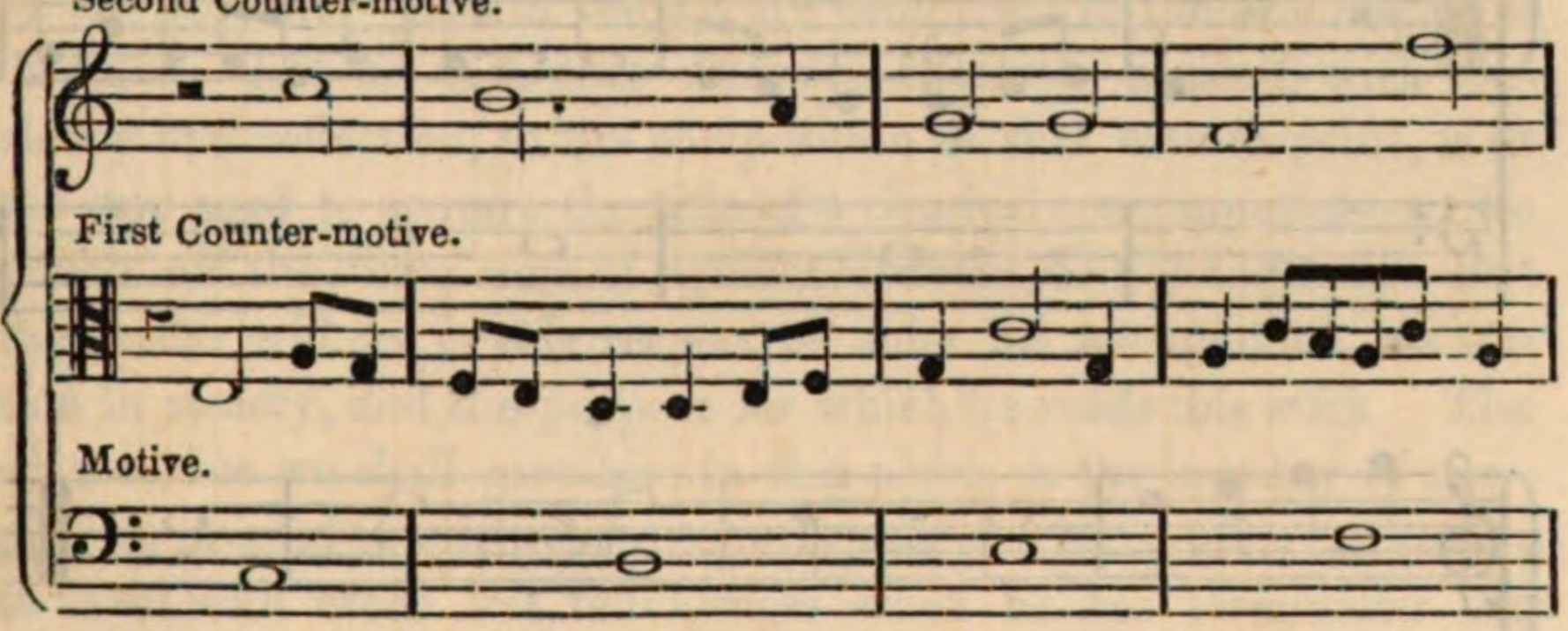
Permanent or Standing Bass.

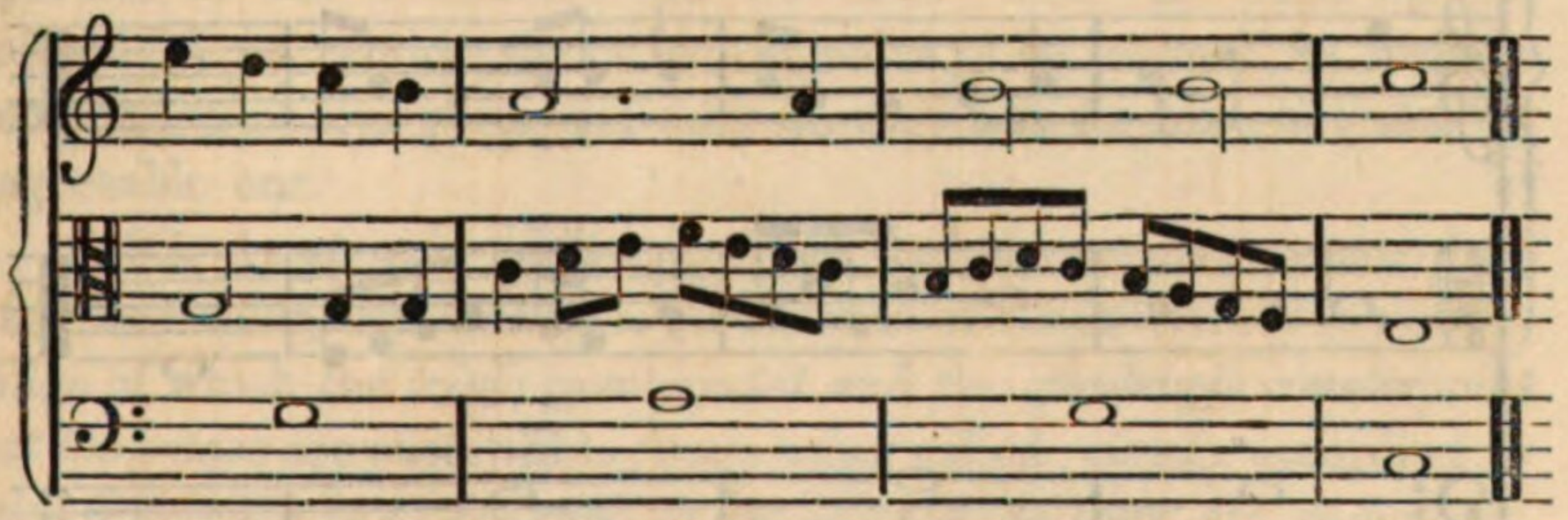


Mixed Counterpoints, Triple and Quadruple.

The name of *mixed* is one of pure fancy; but the manner of making this counterpoint is very curious. It is made in the following manner:—You compose a counterpoint in octave, in contrary movement*, and without any *dissonance*. This is done by adding a part in a third above the *motive*, then another also in a third above the *counter-motive*, as we have made it in the counterpoint in the octave. As soon as the *trio* and *quartett* are made in this manner, you give to the *figures* of the *counter-motives* a variety of *values*, combined in such a manner as to render both one and the other gracefully different, as regards the rhythmical movement and the percussion or successive alternation of the notes†; whence results a mixed composition, intermingled with simple and flourished melody, full of art and charms.

Example.





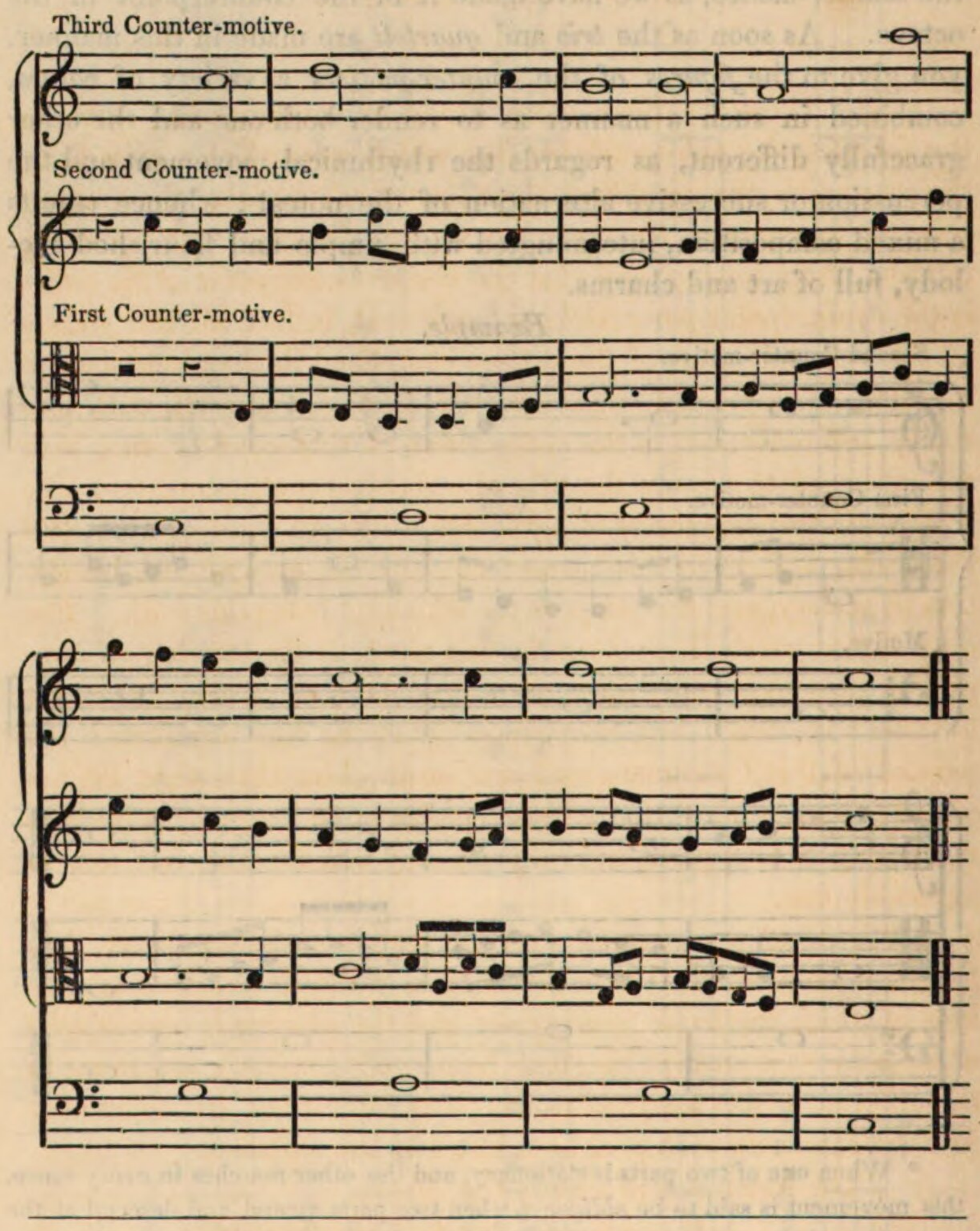
* When one of two parts is stationary, and the other marches in every sense, this movement is said to be *oblique:* when two parts ascend and descend at the same time, their movement is that which is called *straight forward*, *direct*, or *similar:* and when one part ascends and the other descends, it is termed *contrary movement*.

Some theorists admit a fourth movement, which they call *parallel*, and which would be that of two parts marching on the same degree. This pretended movement of one part with respect to the other is rather an immobility.

† Percussion, or succession, it may be almost said, particularly when it is

The foregoing counterpoint is only *triple;* the following example offers a model of the *mixed quadruple counterpoint.* The permanent bass is added to both.

Example.



rapid, traces a line in the silence or in the air, like that which a succession of dots forms in space.

CHAPTER XXVII.

INVERSIONS OF THE TRIPLE AND OF THE QUADRUPLE COUNTERPOINTS AT THE OCTAVE.

§ 92. There are divers other kinds of counterpoint; such as the *inverted*, the *retrograde* (or that which moves like a craw-fish), the *convertible*, the *periodical*, the *enigmatical*, the *lame*, the counterpoint *by aggravation*, &c. &c.; but we can dispense with speaking of them, from having said that the *double counterpoint at the octave* is the counterpoint *par excellence;* and that, in fact, all the secrets of the scientific part of the art are comprised in the observance of its rules. Let us add, that whoever exercises himself, with constancy and reflection, in the composition of that counterpoint, is in the sure road to acquire the title of a classical contrapuntist—a title which *all* the composers of agreeable works do not acquire. But the reader will act in this respect as suits his occupations, his station in society, and the purpose for which he reads this work. The only advice we shall give him in this place, is the inutility of stopping at present to study these counterpoints*; because he can revert to them with much less tediousness when he has terminated the perusal of this Grammar: and we assure him that what he has already done, renders that which remains to be learned, as well as composing in four parts, not only an easy task for him, but also an agreeable one.

§ 93. As an entertaining exercise and amusement, some day, for the reader, we shall here give a table of the inversions or reversings of which the *triple counterpoint* and the *quadruple counterpoint at the octave* are susceptible (both being called *mixed*), according to the different places assigned to the parts after they are composed. We shall indicate each part by a letter of the alphabet.

The letter A will signify the *Motive.*

B ——— the *first Counter-motive.*

C ——— the *second Counter-motive.*

D ——— the *third Counter-motive.*

---

* Which, in musical composition, are what glosses, lays, and acrostics are in poetry.

A Table of the Six Collocations or Inversions of the Triple mixed Counterpoint.

1st.	2nd.	3rd.	4th.	5th.	6th.
C	B	C	A	B	A
B	C	A	C	A	B
A	A	B	B	C	C

A Table of the Twenty-four Collocations or Inversions of the Quadruple mixed Counterpoint.

1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.
D	C	D	B	C	B	D	C	D	A	C	A
C	D	B	D	B	C	C	D	A	D	A	C
B	B	C	C	D	D	A	A	C	C	D	D
A	A	A	A	A	A	B	B	B	B	B	B

13th.	14th.	15th.	16th.	17th.	18th.	19th.	20th.	21st.	22nd.	23rd.	24th.
D	B	D	A	B	A	C	B	C	A	B	A
B	D	A	D	A	B	B	C	A	C	A	B
A	A	B	B	D	D	A	A	B	B	C	C
C	C	C	C	C	C	D	D	D	D	D	D

We rejoice at having thus happily concluded the troublesome task of speaking of so many counterpoints, differing only in name. If we have thus overloaded (though only in appearance) this part of our work, we have done so against our will, and merely at the earnest solicitations of several distinguished composers, British as well as foreign. We had indeed the design of leaving to those, who should devote themselves to the teaching of musical composition according to the Geneuphonic theory, the care of applying it to the mixed counterpoints of every description, that amateurs might not reject the study of our system under the pretence of the apparent multitude of its precepts; but we yielded at last to those pressing solicitations; and if the novelty of our system does not deter people from commencing its perusal, we are almost certain that they will not lay it down without having concluded it, as happens to other works which treat on the subject.

CHAPTER XXVIII

OF MUSICAL COMPOSITION.

In what we have hitherto said is comprised every thing appertaining to Harmony; that is to say, to the agreement and disagreement produced by a *simultaneousness* of sounds: and also to Counterpoint; namely, to the art of conducting simultaneous melodies of greater or less complications, in their distinct arrangements respectively, to the harmonical precadence and cadence through various keys. We shall now proceed to lay down the method that ought to be pursued for the *creation* of *pieces* of music *melo-harmonic*, or in various parts, and this comes under the head of *Composition*. The following are a few preliminary reflections, of which the reader may select such as he deems applicable to his own particular case.

1. Every composer must have a practical knowledge of the instrument for which he composes: the human voice may be considered as the most excellent of instruments.

2. Too much reflection should be avoided at the moment of inventing a melody: the mind should be abandoned to the inspiration of the moment. Extemporising, or giving the play of the fancy to the instrument, may be indulged in *ad libitum;* and the ideas that arise to develop and suitably embellish the subject contemplated should be committed to paper as quickly as possible.

3. Inspiration will be obtained either through the medium of the voice, or of the instrument which the composer understands and plays the best. Let him not enquire how or why: it will lead him gradually on, and will give him the phrases, periods, modulations, graces, strains, and, at length, the whole production.

4. When the entire piece is completed, and not until then, he may proceed to examine it, by repeating it to himself as if to another, as frequently and dispassionately as possible; he will then suddenly have the clearest idea of the different shades which he may easily give to the harmonization. And what is more, when the reader has arranged two or three compositions, this harmonization and all its different effects will offer themselves to his mind in the very act of inventing his melodies.

5. Music is not a language; it is the accent of a language. The duty of the composer is to set down the accent of the sentiment which he feels under the impulse of his genius; his voice or his fingers dictate to him what he ought to write. He will never attain his end, if he stop to make theoretical observations, or to offer practical substitutes.

6. When a melody is once completed, it should be tried; and if it do not prove satisfactory, the composer should not wait to correct it, but proceed to compose another. He may, however, allow some time to elapse before he resume his labours: it would be even better for him to work at an air of a character totally different, before passing to one of the same nature as the first.

7. The two sonorousnesses, or the two chords of music, answer precisely to the two inflections common to all languages, i. e. the *short* and the *long*, or the unaccented and the accented syllables; and consequently to the raising, or weak, or last part of the measure or time—i. e. the arsis; and to the dropping, or strong, or first part of the measure or time—i. e. the thesis. The precadence therefore belongs to the weak or unaccented part, and the cadence to the strong or accented part. These two elements of rhythm possess an equal influence over the duration or extent of the phrase, which is itself only a compound of the two measures; and when this order is properly attended to by the composer, his music is what is called (and with great propriety) well *cadenced*. This same principle explains and confirms the cadencial character of the transcadence, both in triple and common time. But, in the first essays in composition, we must not indulge in a discussion of theories perfectly useless in practice. These very essays will imperceptibly give us an insight into the theories.

§ 95. Musical composition consists essentially in the invention of melodies; that is, of a graceful progression, and of a new direction, that lead the principal melody, called *motive*, to the different degrees of ascent or descent of the sonority—degrees which constitute the sphere, or the harmonical regions which we have called *Polytonogamism*, or infinite multitude of tonics. We suppose these tonics (or sounds, since every sound is a tonic) dispersed on the atmosphere, as the invisible and impalpable *caloric*. In short, composition is the invention of agreeable ascents and descents of a voice or an instrument.

Every succession of sounds is a melody; but that it may be an agreeable melody, it is required, at least in the civilised world, that it should be subject to rhythm or measure, and proceed with a cer-

tain symmetry in the *value* or length of the *figures* or notes; which symmetry constitutes its *members*, its *phrases*, its *periods*, &c. as we shall see in advancing. Let us now speak particularly of its principal resource or means, which is the *modulation*. Let us consider it independently of rhythm, and we shall soon relieve from anxiety both the student and his master, who probably thought themselves disappointed when they saw the section *Counterpoint* concluded, without our having even mentioned the use or given the explanation of that multitude of combinations called to this day *chords*, and which, not being those of our Typometer, seem to have been unknown, or thrown away by the Geneuphonic theory from the domain of music. It is now time to speak of that subject, and to reduce to its natural and necessary simplicity all that medley of names and rules on the pseudo-chords or false positions, all that farrago of denominations and erroneous precepts, which have so much confounded, darkened, and prolonged the study of that art, and bristled it with so many inextricable difficulties.

Either our new theory is absolutely false, or it must be infallibly certain that all groups of *notes different between themselves*, the number of which exceeds three, and which do not form two conjunct thirds of *different* modes (major and minor), is no *cadence;* and that any group which is no *cadence*, is a *precadence*. If it be true, as we have stated, that these two musical *accents* or chords are the only ones existing, we must consequently prove that all those false positions are nothing but the *precadence* altered by one or more sounds foreign to it, and consequently dissonant, and that these dissonances fade away and are *resolved*, as we have learnt in the section on Counterpoint.

We are sorry indeed to write so slowly that which is so quickly shown on the slate or blackened board; but we are writing here for those who cannot hear us.

CHAPTER XXIX.

PRECADENCIAL ALTERATIONS, THEIR USE IN HARMONY, COUNTERPOINT, AND MUSICAL COMPOSITION.—HARMONIC ROOT.

§ 96. *First Alteration.*—We show, in the new theory, that the *minor mode* is the sole essentially *consonant mode* in music, and that the major third is, after the interval of a second, the first cause of *dissonance.* We now limit ourselves to say that the *cadence* is the only *modic chord ;* because to it only belongs the sound or note 3, which is the only one that declares whether the *mode* is *major* or *minor.* It is for this very reason that in the *transcadence,* which is a true *cadence* (as we have seen, § § 44, 45, 46, 47, Chap. IX, page 142, and following) enters the other *modic* sound of the scale, which is the 6 (which sixth is the third of that new cadence which has for note 1 the note 4 of the key in which it is note 6): and from this cause also results this axiom, known by all harmonists, that " The sixth note of the scale is always of the same nature as the third, major or minor."

Thence, as no *modic* sound, viz. neither the 3 nor the 6, enters into the *precadence,* its character is immodic, or neuter*. It is for this reason that it equally suits the major and minor modes.

§ 97. We have seen, in Prolegomena, § 72, pages 87 and 88; and in the present treatise, Chap. VIII, § 40, page 135 ; Chapter IX, § 47, page 147, and following ; and Chap. XXII, *second observation,* § 77, page 205 ; that the *precadence* or dissonance is the means employed by nature for the *tonogamic destruction* and reproduction. Consequently, when two tonics meet, and are changed by their shock into notes 4 and 5 of a new key, there appears with them also another tonic, likewise dissonant, which is the *major third* of the 5, viz. the note 7 ; and for this reason the note 7 is the one which bears the new *alterative sign,* foreign to the scale of the anterior key. If, for instance, the tonics *Do* and *Re* strike each other, they are immediately changed into *Do* 4 and *Re* 5 ; and by the very act

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* See Prolegomena, § 5, pages 73 and 74, and the Rules drawn from the observation of the Typometric Table, pages 112 and following.

of the production of that dissonance, i. e. of the collision of these two sounds, arises from it another dissonant sound, which is the *major third* above the 5, a sound that bears an *alterative sign*, which the note that represents it did not bear in the anterior key; and, in fact, we see that the major third of the *Re*♮, 5, is the *Fa* with a *sharp*, which it had not before the collision of the *Re*♮ with the *Do*♮, and which makes it note 7 of the new key, which is necessarily that of *Sol*.

§ 98. In the chapters and §§ referred to since the beginning of the present chapter, we have in a great measure fulfilled our promise, made after the example of § 72 of the Prolegomena, page 88. We have now arrived at that stage of our harmonical voyage where it becomes necessary to complete our reader's knowledge on the important subject of precadencial alterations—a subject which, for three centuries, to the present day, has never been thoroughly understood, or was overlooked, even by the most learned theorists; which is undeniably proved, either by the fact of every one having viewed it in a different light, or by the surprising silence kept by most of them on a matter so highly interesting. We hope, however, that, guided by the Geneuphonic luminousness, as by another Ariadne's thread, a few pages will suffice to render perfectly clear and intelligible, even to children, that great question, the most vital perhaps in musical composition.

Rule I.—In the established key, a precadencial alteration cannot take place but in the cadence or the transcadence; because the precadence admits of no meeting or shock of sounds, except of that which is the generator of its own scale: whence it results that no fresh key can be entered into but by its precadence.

Rule II.—The alteration falls always on the note 7 of either the key to be left or that to be entered, as is demonstrated by the following

Example of Precadencial Alterations in Major Keys with Sharps.

Altered Cadence of *Re*♮ major	Precadence of *La*♮ major.
2 Mi.	7 Sol♯
	> 7 Do♯
5 La.	5 Mi
	> Sol 4
3 Fa♯.	4 Re
1 Re.	2 Si

Shock of the 2nd against the Tonic.

Altered Cadence of *Mi*♮ major	Precadence of *La*♮ major	Cadence of *La* major.
7 Re♯.	7 Sol♯.	1 La
5 Si.	5 Mi.	5 Mi
	> La 4	
3 Sol♯.	4 Re.	3 Do♯
1 Mi.	2 Si.	1 La

Shock of the 7th against the Tonic.

Analysis of the foregoing Example.

Does the note 2, *Mi*, strike the tonic *Re*, 7? In the very chord in which their shock takes place, the tonic becomes note 4 and the second becomes note 5 of a new key, which of course is the key of *La*: the major third of *Mi*, 5, is *Sol* sharp—the next sharp to the two existing in the key of *Re* (which is to be left). It is therefore positive that the *Sol* sharp is to be the note 7 of the key that is coming, and that the *Sol* natural, note 4 of the scale of *Re*, will ascend a semitone to become the seventh of the scale of *La*. The *Do* sharp, note 7 of the key of *Re*, to be left, passes unaltered, as note 3, to the key of *La*, to be taken.

Let us now examine the second part of the example, in which, through the inversion of the scales of the two stricken notes, the parts are changed. The *Mi*, 2, has become the tonic; the *Re*, note 1, has become note 7. Let us alter the cadence of *Mi*, by introducing in it that *Re*, 7, which is the major third to its note 5, *Si*. As soon as the *Re*, 7, strikes the *Mi*, 1, their clashing instantaneously makes the *Re* 7 note 4, and the tonic *Mi* note 5, of a new key. The *Mi* will always be note 5, because, in the order of the natural scale, it is higher than *Re*; and as the notes 4 and 5 are the same, that new key cannot be other than the key of *La*: but how different will be the relations between the key to be left (that of *Mi*) and the key to be taken, from those which took place when, as in the first part of the example, the key to be left was that of *Re*! Now it is not the *Sol* natural 4 which takes a sharp to become 7 of the scale of *La*; it is the *Sol* sharp 3 which passes unaltered to that seventhship. The seventh does no longer, as the *Do* sharp did from the gamut of *Re* to that of *La*, pass unaltered from the note 7 to note 3. Now the note 7, *Re* sharp, loses its accident—viz. its elevation—and descends a semitone to become note 4 of the key of *La*. Let us then proclaim the following

Rule III.—In the keys of the major mode, either with sharps or flats, when the shock is from the second upon the tonic, the precadencial alteration falls upon the seventh of the key that is to be gone into; for which the note 4 of the scale to be left ascends a semitone to become that note 7; and the note 7 of the key to be abandoned becomes, without any alteration, note 3 of the scale to be adopted. But when the shock is between the seventh and the tonic, the alteration falls upon the note 7 of the key to be abandoned; which note 7 loses its accident, or its elevation, and descends a semitone to become note 4 of the key generated by the shock. In this case, it is the third of the key just destroyed which

becomes, without any alteration, note 7 of the key that is produced. The accuracy of this rule is fully proved by both the preceding and the following example. We do therefore request our readers to apply to the latter the ~~following~~ foregoing analysis, which suits both equally well.

Example of Precadencial Alterations in Major Keys with Flats.

Altered Cadence of *Re* flat major.	Precadence of *La* flat major.
2 Mi♭	7 Sol
	> Do 1
5 La♭	5 Mi♭
	> Sol 4♭
3 Fa	4 Re♭
1 Re♭	2 Si♭

Shock of the second against the tonic.

Altered Cadence of *Mi* flat major.	Precadence of *La* flat major.	Cadence of *La* flat major.
7 Re	7 Sol	1 La
5 Si♭	5 Mi♭	5 Mi♭
	> La 4♭	
3 Sol	4 Re♭	3 Do
1 Mi♭	2 Si♭	1 La♭

Shock of the seventh against the tonic.

Rule IV.—In the typic scale of *Do* natural major, the collision of the seventh with the tonic produces of course the key of *Fa*. If that key be that of *Fa* natural—viz. formed with a flat—the anterior rules undergo no alteration: but if it be the key of *Fa* sharp—viz. formed with six sharps—then the *Si*, 7 of the key of *Do* natural, becomes, without any alteration or descent, note 4 of the key of *Fa* sharp. In the typic scale of *La* natural minor, the collision of its note 7, *Sol* sharp, with the tonic generates the key of *Re* natural major with two sharps, or that of *Re* flat major with five flats. In the former case the *Sol*, 7, accidentally sharpened, loses its accident, to become note 4 of the key of *Re* natural major. In the latter case it loses first its accidental sharp, and secondly its intrinsic naturality; in order to pass, flattened, from note 7 of the scale of *La* to note 4 of the key of *Re* flat major.

The above observations, grounded on the typic scale of *La* minor, do smoothly and naturally guide us towards the keys of the minor mode.

Rule V.—Whereas to all those keys the two preceding rules are fully applicable, exactly in the same manner we have applied them, in the present §, even before enunciating them, to six scales of the major mode. We shall now confine ourselves to the explanation, on two scales of the minor mode, of the effects of the shock of the second on the tonic, as well as of the inversion of that shock; viz. of the collision of that tonic which has become the seventh, on that second which has become the tonic. In order to render this rule more plain and intelligible to our readers, we shall, as above,

state the facts and give the example before we declare the rule; so that it will rather appear the consequence than the cause of the said facts. The example is this:

Example of Precadencial Alterations in Minor Keys with Sharps.

Altered Cadence of *La* ♮ minor.	Precadence of *Mi* ♭ minor.
2 Si	7 Re ♯
> Sol 7 ♯	
5 Mi	5 Si
> Re 4	
3 Do	4 La
1 La	2 Fa ♯

Shock of the second against the tonic.

Altered Cadence of Si ♮ minor	Precadence of Mi ♮ minor.	Cadence of Mi ♮ minor.
7 La ♯	7 Re ♯	1 Mi
5 Fa ♯	5 Si	5 Si
> Mi		
3 Re	4 La	3 Sol
1 Si	2 Fa ♯	1 Mi

Shock of the seventh against the tonic.

Analysis of the foregoing Example.

Does the note 2 *Si* strike the tonic *La?* In the very chord in which the clashing takes place, the *La* 1 is metamorphosed into note 4, and the *Si* 2 into note 5, of a new scale, which of course is the key of *Mi*. Now the major third to that note 5 of the key generated by the shock, and in which we are going to enter, is *Re* sharp. It is therefore certain that *Re* sharp is note 7 of the key to which we go, or rather in which we already are, by its precadence. Consequently the *Re* natural, 4 of the key of *La* natural minor, ascends a semitone and assumes, in order to become note 7 of the key of *Mi* natural minor, a sharp, which it had not in that of *La* natural minor. On the contrary, the *Sol* sharp, 7 of the key of *La* natural minor, loses its accident, or its elevation, and has to descend a semitone to become note 3 in the scale of *Mi* natural minor. Do we, in reversing the scales just spoken of, change parts, and consider the *La*, which an instant ago was the tonic, as note 7 of the key of *Si* natural minor, and accordingly the *Si*, which was note 2, as the tonic? The clashing of the *La* 7 against the *Si* 1 will undoubtedly produce the same key of *Mi* natural minor as before; and, in the same manner, the *La* 7, being, in the order of the natural scale, lower than the *Si*, will become note 4, whilst the *Si* 1 becomes note 5, of the new scale; but then it is no longer the *Re* natural, 4 of the key to be left, that ascends a semitone to become note 7 of the key to be taken; it is the minor third, *Si* natural, *Re* natural, of the cadence of the key of *Si*, which becomes major third, *Si* natural, *Re* sharp, of the precadence of *Mi*; it is not the sound 4, but the sound 3, that becomes 7. Moreover, the note 7 of the key to be left does not, as the *Sol*

did before, lose its sharp to become note 3 natural in the key to be taken; it is now to become note 4, that the seventh, *La*, loses its accidental sharp.

Let us now present to our readers the same example as the last analysed, with the only difference, that we shall sign with flats the scales of *Mi* and *Si*, which, in the example of Rule V, are formed with sharps. We shall, however, leave the chord of the key of *La* natural minor as it is, in preference to adopting the scale of *La* flat minor; viz. the same a semitone lower; because the two typical scales march with keys with flats equally well as with keys with sharps. The following therefore is the

Example of Precadencial Alterations of Minor Keys with Flats.

Altered cadence of *La* natl. minor.	Precadence of *Mi* flat minor.
2 Si	7 Re♮
	> Sol 7♯
5 Mi	5 Si♭
	> Re 4
3 Do	4 La♭
1 La	2 Fa

Shock of the second against the tonic.

Altered cadence of *Si* flat minor.	Precadence of *Mi* flat minor.	Cadence of *Mi* flat minor.
7 La♮	7 Re♮	1 Mi♭
5 Fa	5 Si♭	5 Si♭
	> Mi 4♭	
3 Re♭	4 La♭	3 Sol♭
1 Si♭	2 Fa	1 Mi♭

Shock of the seventh against the tonic.

Analysis of the foregoing Example.

In the first chord, the note 2, *Si*, strikes the tonic *La*; their collision suddenly transforms them into notes 4 and 5 of the scale of *Mi*. As the major third to the *Si* flat, note 5 of the key of *Mi* flat minor, coming forth is *Re* natural, it is clear that the *Re* natural will be note 7 of that rising scale. We see, therefore, at the first glance that the first difference of precadencial alteration between the key of *Mi* natural minor and that of *Mi* flat of the same mode is that the *Re*, 4 of *La*, does not want to ascend a semitone to become 7 of the scale to be entered into; but that the *Si*, 2 of *La*, has to descend a semitone to become 5 of *Mi* flat; which constitutes the second difference. We observe, moreover, that the *Sol* sharp, 7 of *La*, which had to descend only a semitone to be the third of *Mi* natural minor, must now descend a whole tone to become *Sol* flat, note 3 of the scale of *Mi* flat minor; and this is the third and last difference.

Let us now see the results of the fall of the tonic becoming seventh, on the second becoming the tonic. Let us, in other words,

compare the altered cadence of *Si* flat minor with the precadence of *Mi* flat minor; these two chords, which are intrinsically the same, would be an exact inversion of each other, were not the *Re* of the precadence of *Mi* flat obliged to assume an accidental natural to be, in that scale, at the necessary distance of a semitone from the octave, *Mi*, 1. The minor third, *Si* flat, *Re* flat, lower third of the cadence of *Si* flat, becomes the major third, *Si* flat, *Re* natural, to be the higher third of the precadence of *Mi* flat; the note 3 of the former chord ascends therefore a semitone, to be 7 of the latter. The *La* accidentally natural to be note 7 of the scale of *Si* flat, loses its natural, and descends a semitone to become the flattened note 4 of the key of *Mi* flat. The note 4, *Mi* flat, becomes, unaltered, the tonic of the key of *Mi* flat; and, finally, the *Fa* natural, 5 in the scale of *Si* flat, becomes, without alteration, note 2 of the key of *Mi* flat; in which it is the sole note essentially natural; the *Re* owing that character in that scale to its position of seventh, as we have before suggested.

We strongly recommend to our benevolent readers to write similar examples in all the keys of the two modes, either with sharps or with flats, which we have not mentioned in the present paragraph: it being understood that, when we say all the keys, we always mean the thirty keys in use. See the *Rules drawn from the observations of the Table of Polytogammism*, Chap. IV, § 14, page 108; and the *Rules drawn from the observation of the Typometric Table*, Chap. V, § 19, page 116.

In writing these examples, our readers will undoubtedly meet with those trifling differences arising from disparity in the respective situation of scale with scale; but those differences are merely adventitious; they have nothing to do with the character of the precadencial alteration in the gamuts between which they take place: and, besides, they do not prevent the five rules, given in the present §, from being unexceptionable, uniform, and always safe and important guides to any musical composer; because they are derived from the unerring analogies of nature, or rather they are one of them.

§ 99. The result of the conspicuous fact explained in §§ 97 and 98, with an extent hardly proportioned to its importance, is that the major third leads to or is in the way of dissonance; since it contributes, as we have just seen, to the destruction of a key, and to the reproduction of another, as the inseparable, the unavoidable companion of the clashing, or of the dissonant interval of second, which, by invading the reigning key, begins its destruction; as the

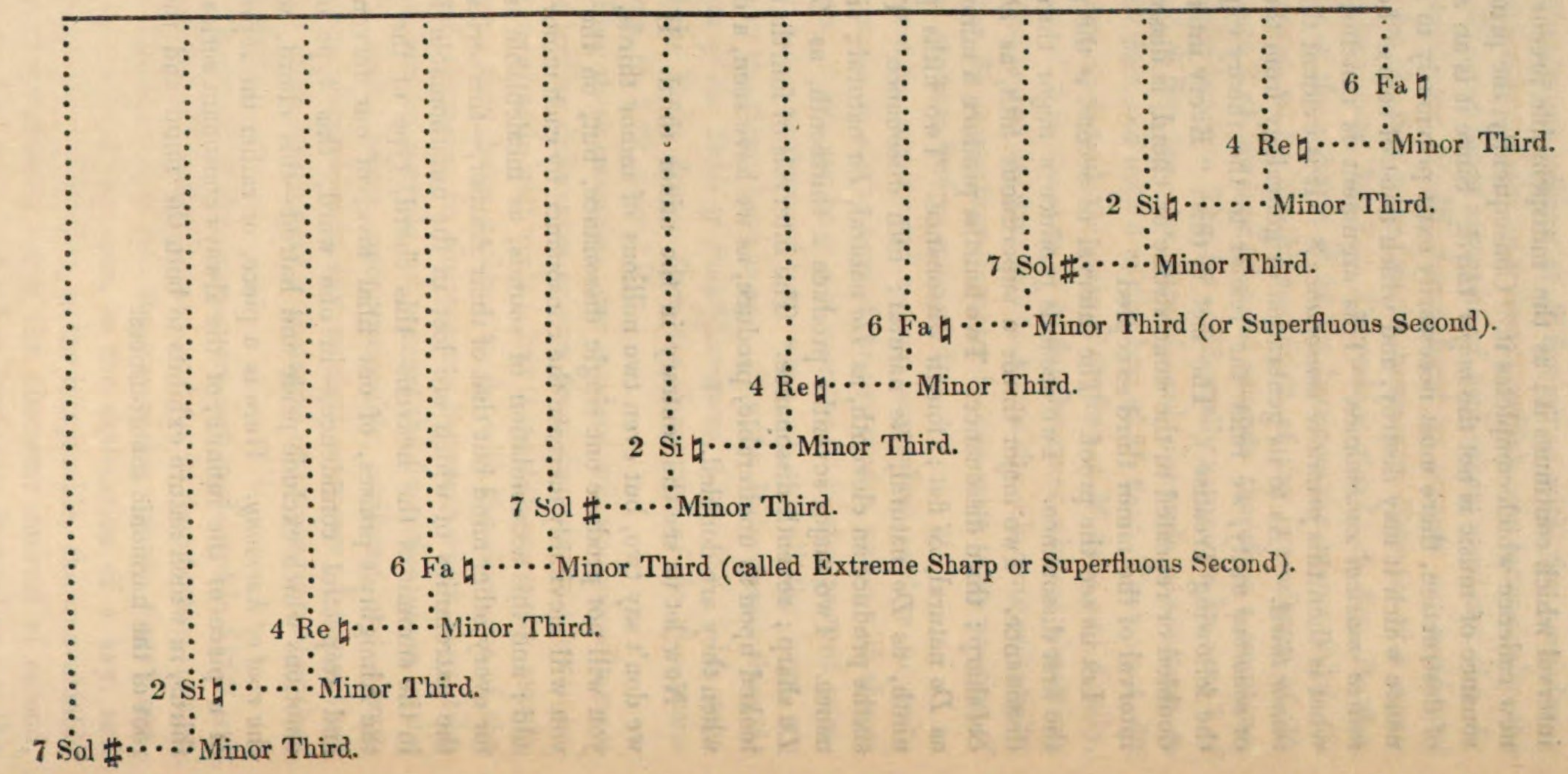
interval which continues it; as the indispensable precursor of the new cadence which completes it. Consequently, the primitive consonance of music is not the *major third.* Since it is an accomplice of destruction, there must necessarily exist previously to it a consonance which it may destroy, and which must of course be the *primitive musical consonance.* This argument is conclusive. And what is then this *primitive consonance?* It is evident that it is the *minor third.* (As to its generation or genealogy from the *Monoson* or *sonorous* unity, we refer the reader to the theory explained in the following Treatise.) The fact is this: "Every interval, when doubled or repeated in the same stroke or chord, is dissonant; the interval of the minor third excepted."

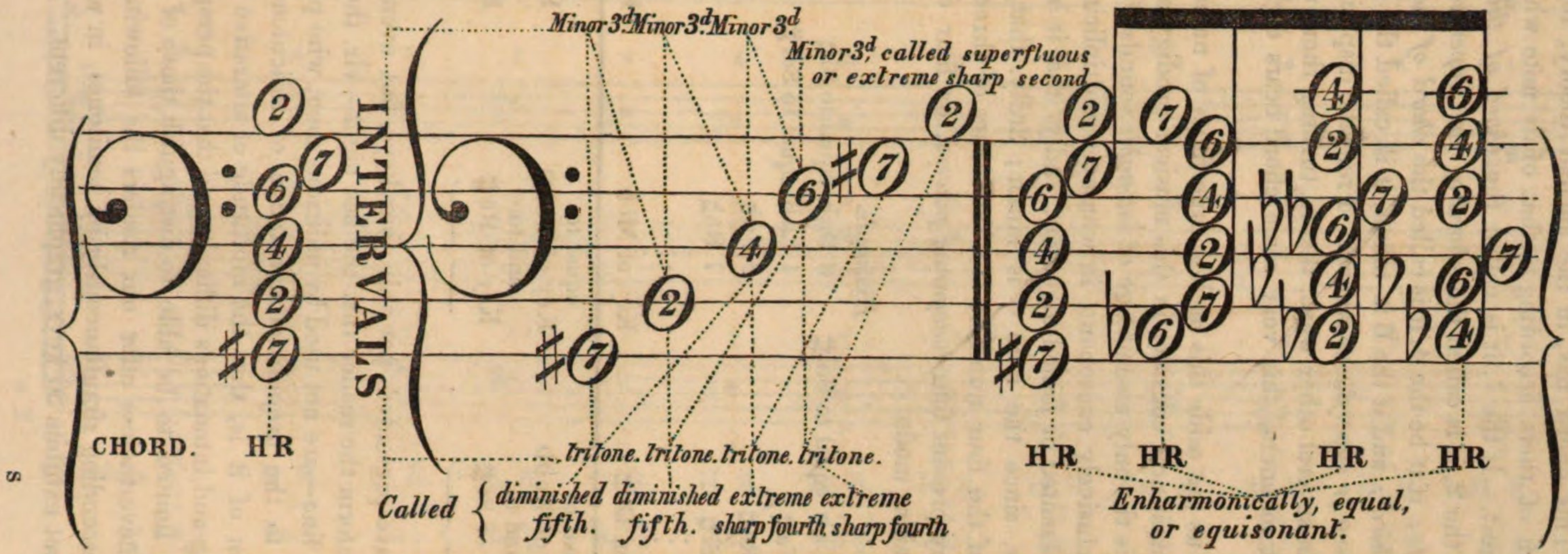
Let us see the proof. The interval of second is the primitive; the first dissonance. Two seconds produce a major third; second dissonance. Two major thirds a superfluous fifth, as *Do* natural, *Sol* sharp; third dissonance. Two fourths produce a minor seventh, as *Do* natural, *Si* flat; fourth dissonance. Two fifths produce a ninth, as *Do* natural, *Re* natural; fifth dissonance. Two major sixths produce an eleventh, as *Do* natural, *Fa* natural; sixth dissonance. Two major sevenths produce a thirteenth, as *Do* natural, *La* sharp; seventh dissonance. The intervals of fourths and fifths, looked upon as unalterable, produce, as we have seen, a dissonance when they are doubled.

Now let us see the contrary in the minor third. If you join, we don't say two, but even two millions of minor thirds, not only you will not produce one single dissonance, but, on the contrary, you will inevitably increase the consonance by each minor third you add; and this accumulation of sounds, as incalculable as the stars for every other mind but that of their Author,—this series or chain, the extremities of which are lost in the unfathomable depth, and in the summit of the heavens—this chord, type of the accent of the Almighty's praises, of our filial love, of our fervent prayer, and respectful confidence,—in one word, this type of all the emotions which exclude pride and hatred—this chord, we say, is the *root of harmony.* Here is a piece, or rather the representation of a piece of the infinite, of the always consonant series of minor thirds, in which nature exhibits to both the mind and the ear the root of the harmonic sonorousness.

Example.

HARMONIC ROOT.




Minor 3d. Minor 3d. Minor 3d.
Minor 3d, called superfluous or extreme sharp second
INTERVAL'S
CHORD.
HR
Tritone. Tritone. Tritone. Tritone.
Called { diminished fifth. diminished fifth. extreme sharp fourth. extreme sharp fourth
HR HR HR HR
Enharmonically, equal, or equisonant.

§ 100. This chord has, in the ancient theory, four *principal* names; each of them according to that of its note which is taken for the gravest. If the 7, it is called the *chord of the diminished seventh;* if the 2, it is called the *chord of the imperfect fifth*, and *sixth sensible;* if it be the 4, it is called the *chord of the tritone with the minor third;* and if the 6 is taken, it is called the *chord of the extreme sharp or superfluous second.* From the disposition of these four notes in several other ways, that is, turning them upside down in different manners, this very same chord bears eighteen names more.

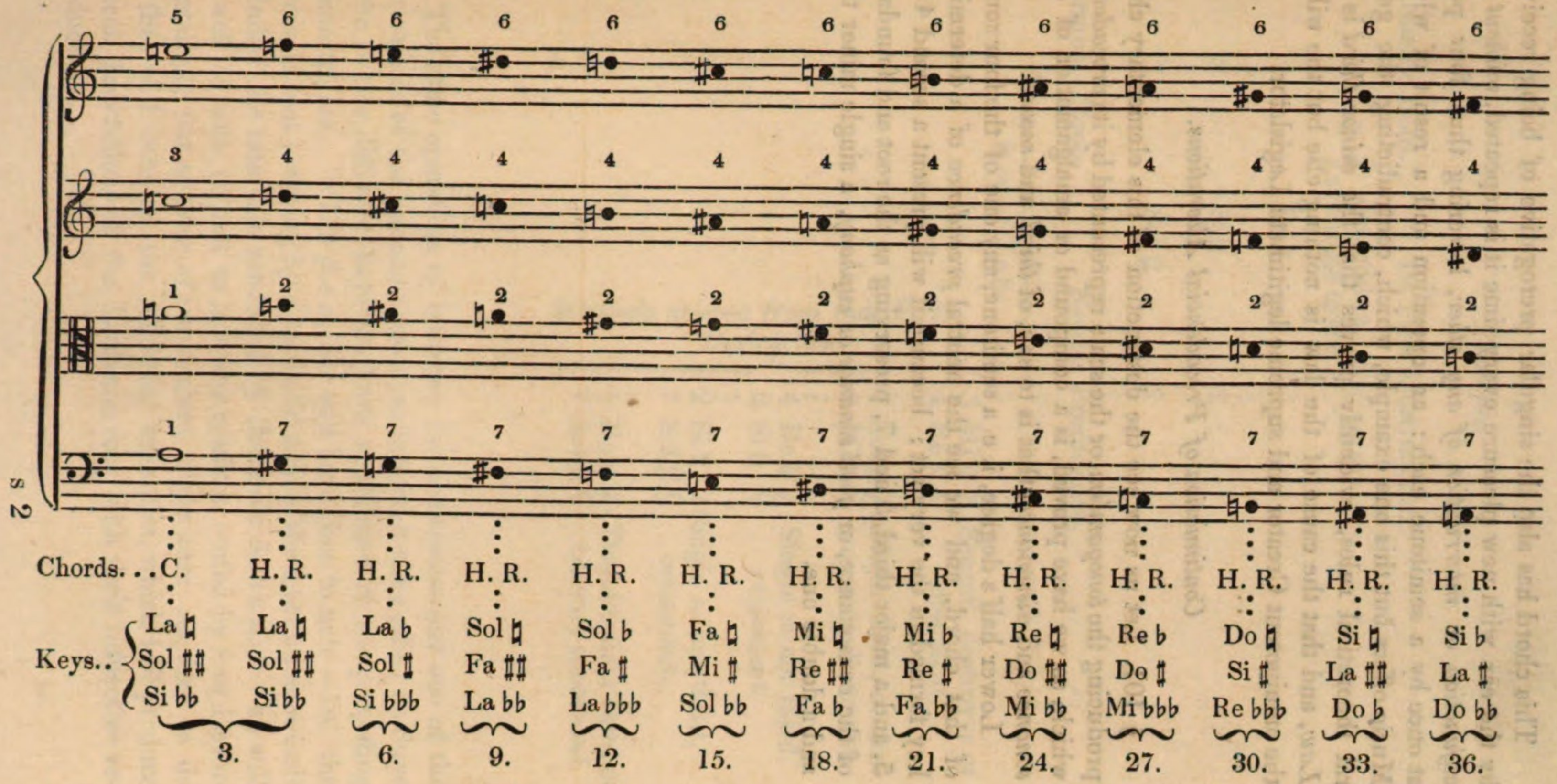
But let us put aside this useless superfluity of names: the only truths we must now consider in this musical prodigy are—1st. that this chord is the only assemblage of *intonable* sounds which are, and remain, exclusively consonant, in whatever multiplicity of octaves they are presented or joined together; 2ndly. that it belongs to the *minor mode*, since the note 6 is minor; 3rdly. that, in changing the order of the four numbers and the names of three of the four sounds, they present four *tonogamic powers*, or four distinct keys, all of the minor mode.

Example.

6 Fa♮	6 La♭ equal to Sol♯	6 Do♭ equal to Si♮	6 Mi♭♭ equal to Re♮
4 Re♮	4 Fa♮	4 La♭ equal to Sol♯	4 Do♭ equal to Si♮
2 Si♮	2 Re♮	2 Fa♮	2 La♭ equal to Sol♯
7 Sol♯	7 Si♮	7 Re♮	7 Fa♮
⋮	⋮	⋮	⋮
Key of La♮	Key of Do♮	Key of Mi♭	Key of Sol♭
equal to Key of Si♭♭ and to Key of Sol×	equal to Key of Re♭♭ and to Key of Si♯	equal to Key of Fa♭♭ and to Key of Re♯	equal to Key of Fa♯ and to Key of Mi×

We have presented, not only four keys, but even twelve; and we must inform the reader that the last eight—viz. those under the separation line—are not used by judicious men, who prefer a useful simplicity to the prejudicial affectation of ridiculous knowledge. The reason of it is, that the multitude of alterative signs renders the reading and intonations difficult, and that the perspicacity of the ear is too limited to be able to distinguish those of the first four. We will nevertheless offer our readers the following example of melody descending simultaneously by semitones, in which the harmonical root exhibits 36 keys, graphically different.

Example of the Simultaneous Descent of the Harmonic Root.



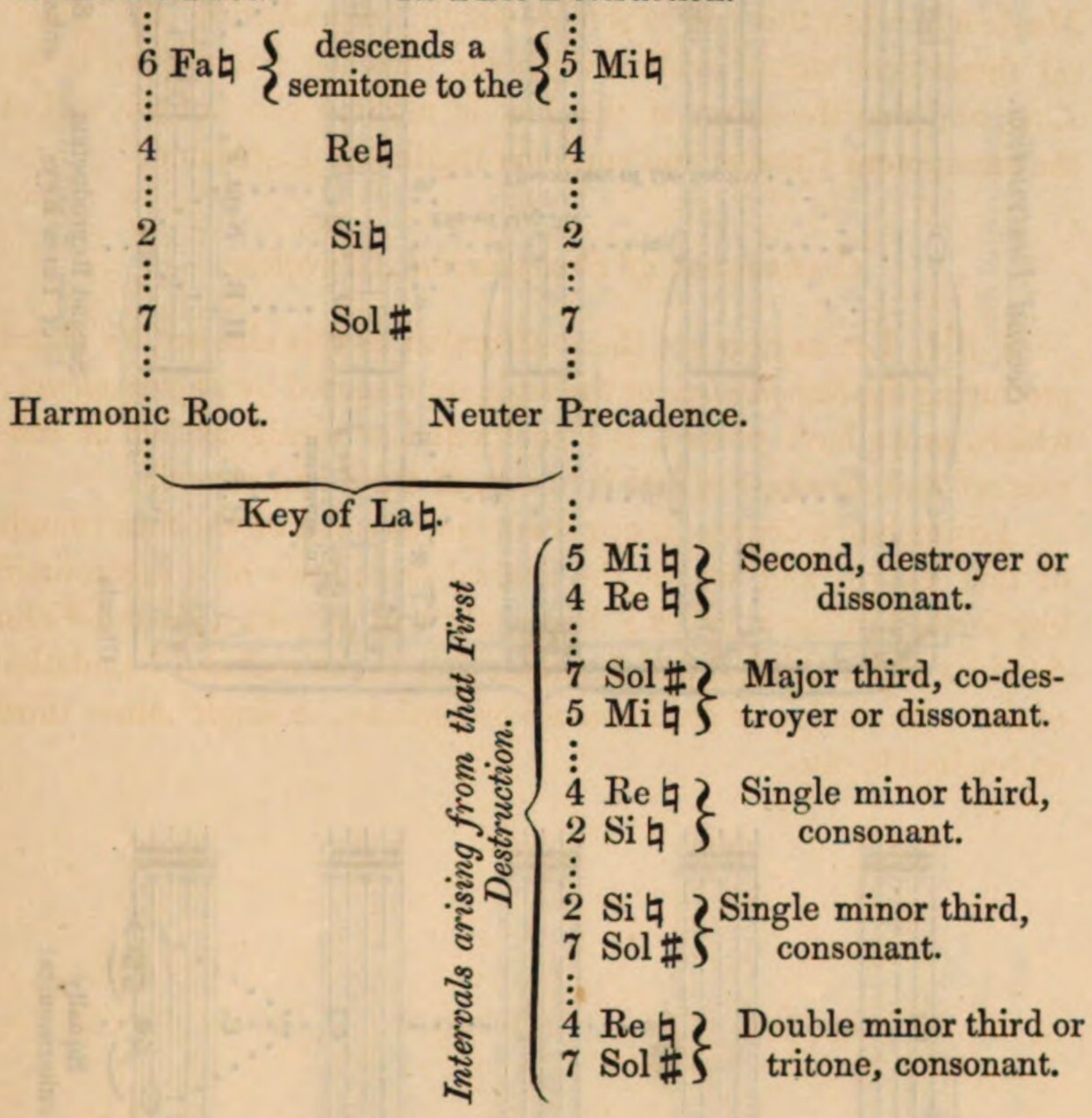
This chord has also the singular prerogative of being received by the ear with new pleasure every time it is repeated, *without the adjunction or interruption of any other*, lowering thus four parts at once by a semitone each: an operation and a result of which Music offers but this one example, which, contradicting the general theoretical rules, evidently proves that the *minor third* is the *Law*, and that the cause of the law is nothing else but the will of the omnipotent Creator and supreme legitimate Legislator.

Continuation of Precadencial Alterations.

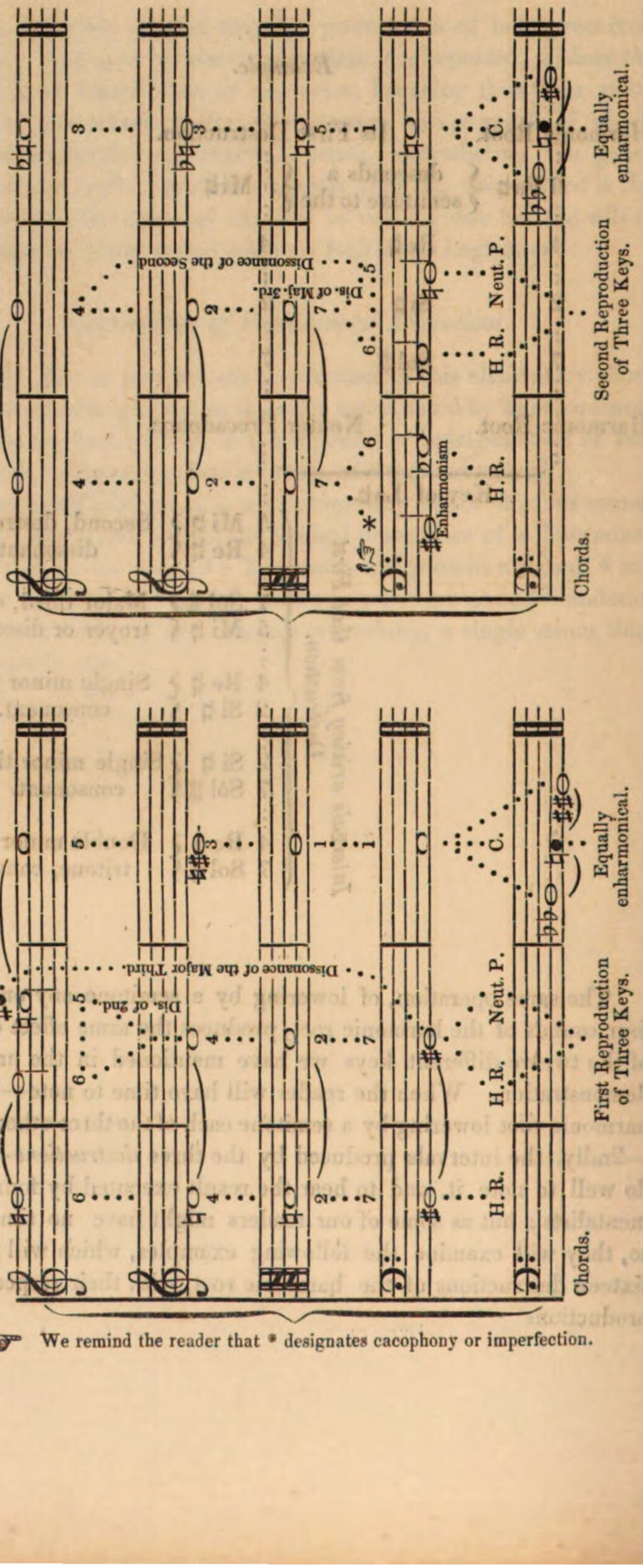
§ 101. Let us now see the destruction of this elementary chord producing the *tonogamism*, or the scale represented by its *precadence;* which, as we have proved, is a compound or amalgamation of *consonance* and *dissonance*, that is to say, of *third* and *second*.

Lower half a degree, i. e. a semitone, any one of the four sounds of that chord, and we see the neutral *precadence* of a determined key formed in the very act; because it will present a second 4 and 5, and a major third, 5 and 7, preserving as the root and foundation of the consonance, or *good sonance* or *euphony*, a single minor third and a double one.

Example.

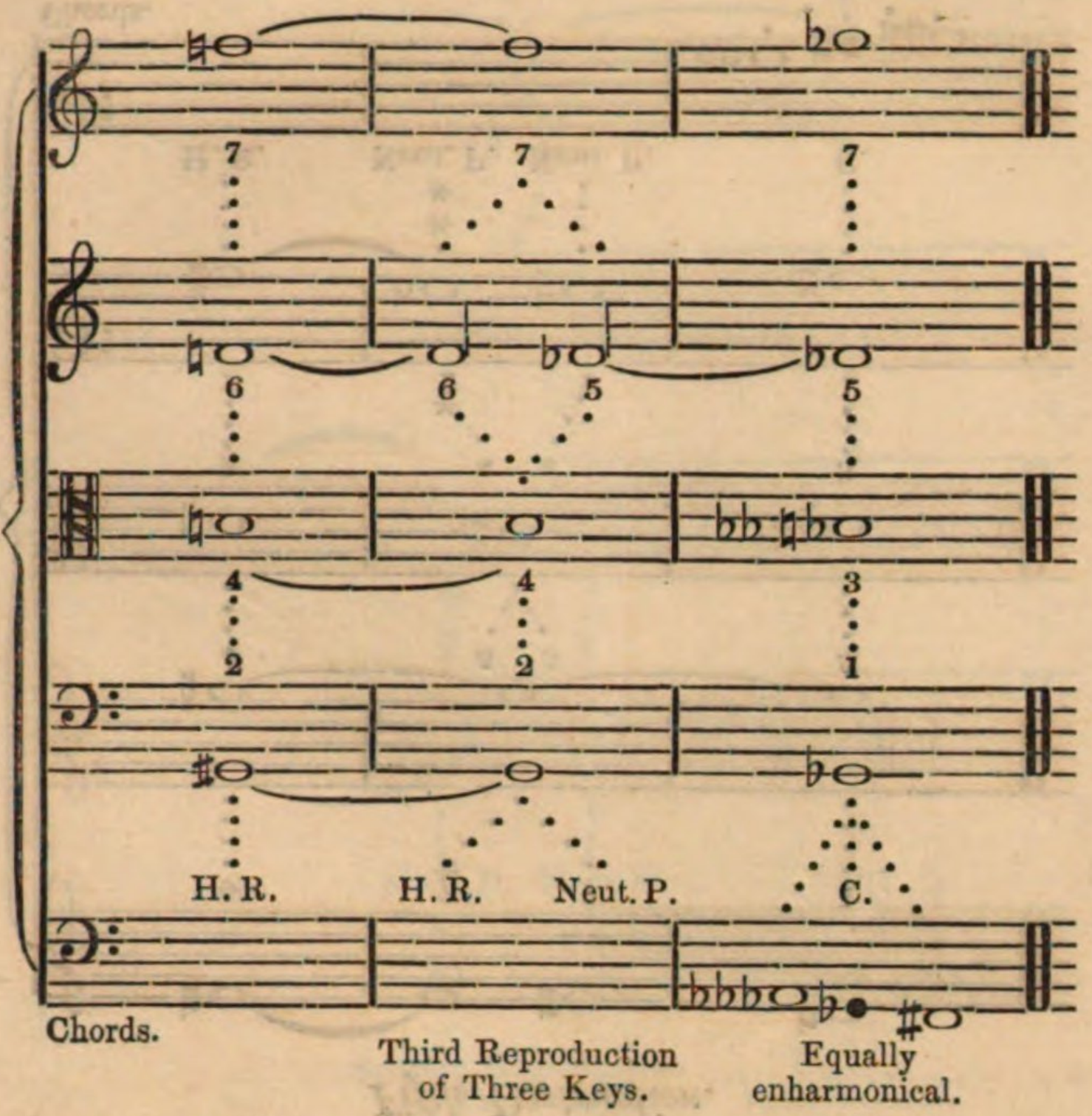


The same operation, of lowering by a semitone any one of the four sounds of the harmonic root, produces the same effect on those of the twelve different keys we have mentioned in the preceding demonstration. When the reader will have time to note—1st. the harmonic root lowering by a semitone each of the three other sounds —2ndly. the intervals produced by the three *destructions*—he will do well to note it, and to hear the result executed by four instrumentalists; but as some of our readers might have no time to do so, they will examine the following examples, which will produce sixteen destructions of the harmonic root, with their respective reproductions.



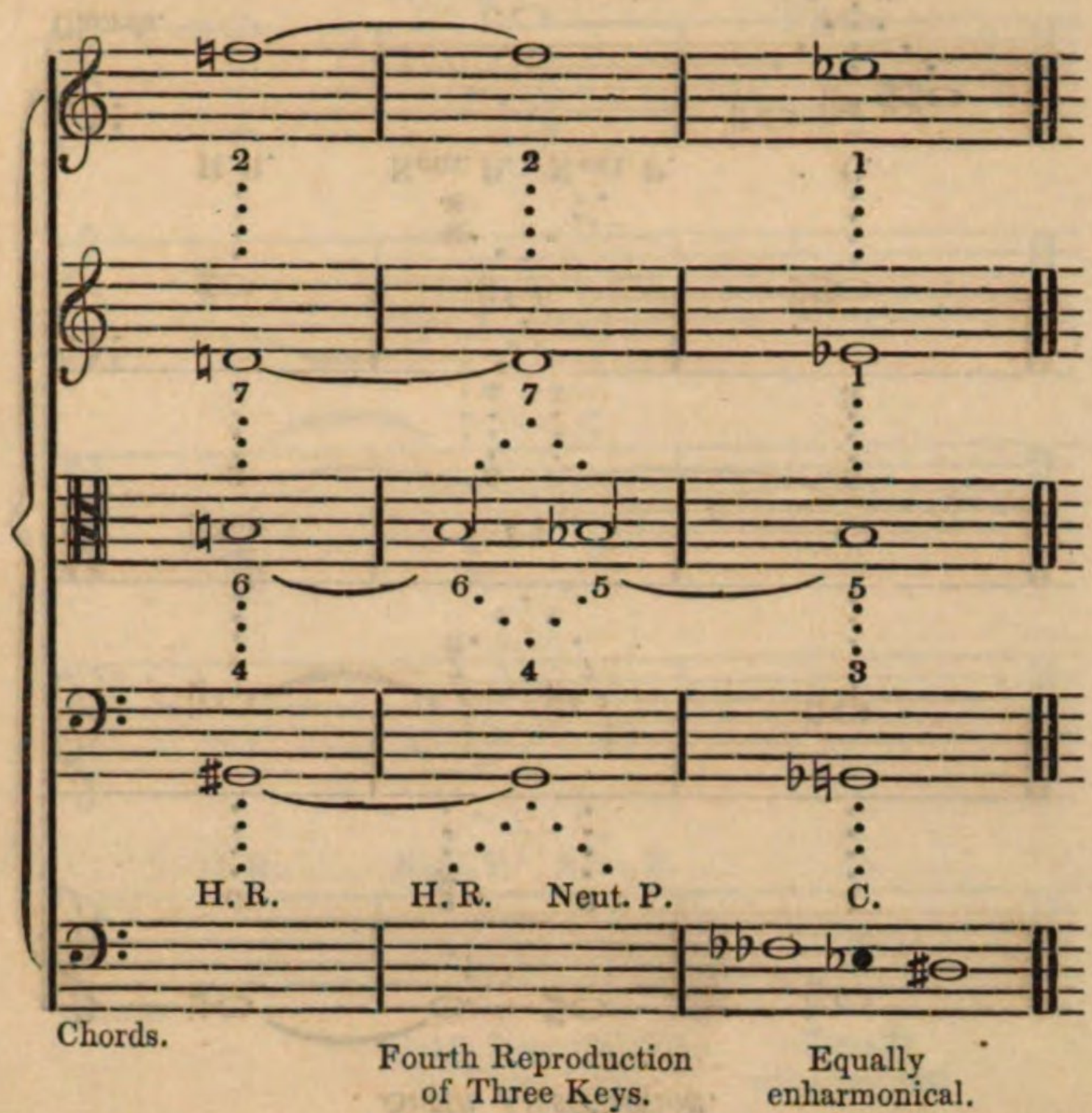
☞ We remind the reader that * designates cacophony or imperfection.

Third Destruction.



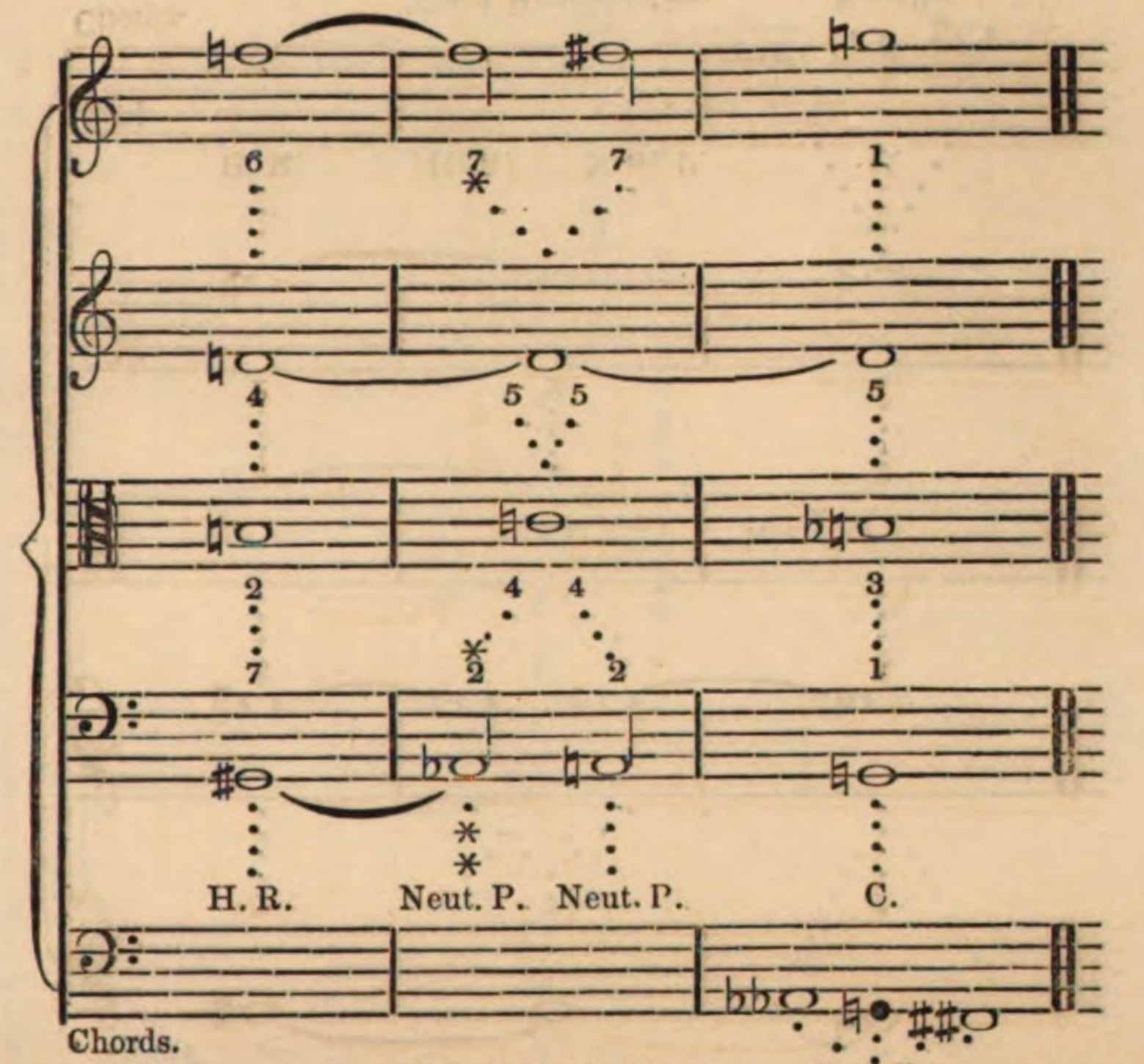
Chords. Third Reproduction of Three Keys. Equally enharmonical.

Fourth Destruction.



Chords. Fourth Reproduction of Three Keys. Equally enharmonical.

Fifth Destruction.

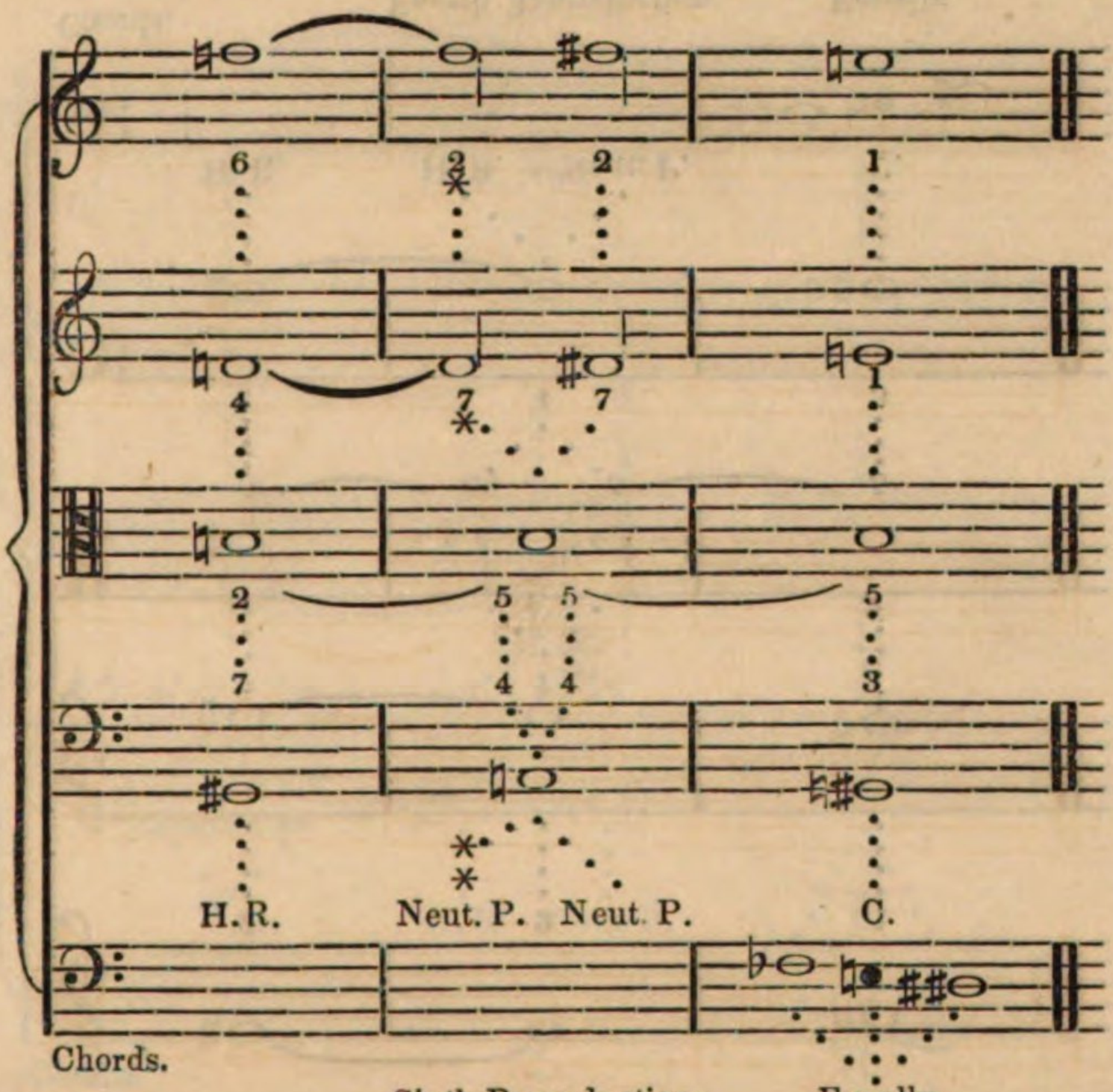


Chords.

Fifth Reproduction of Three Keys.

Equally enharmonical.

Sixth Destruction.

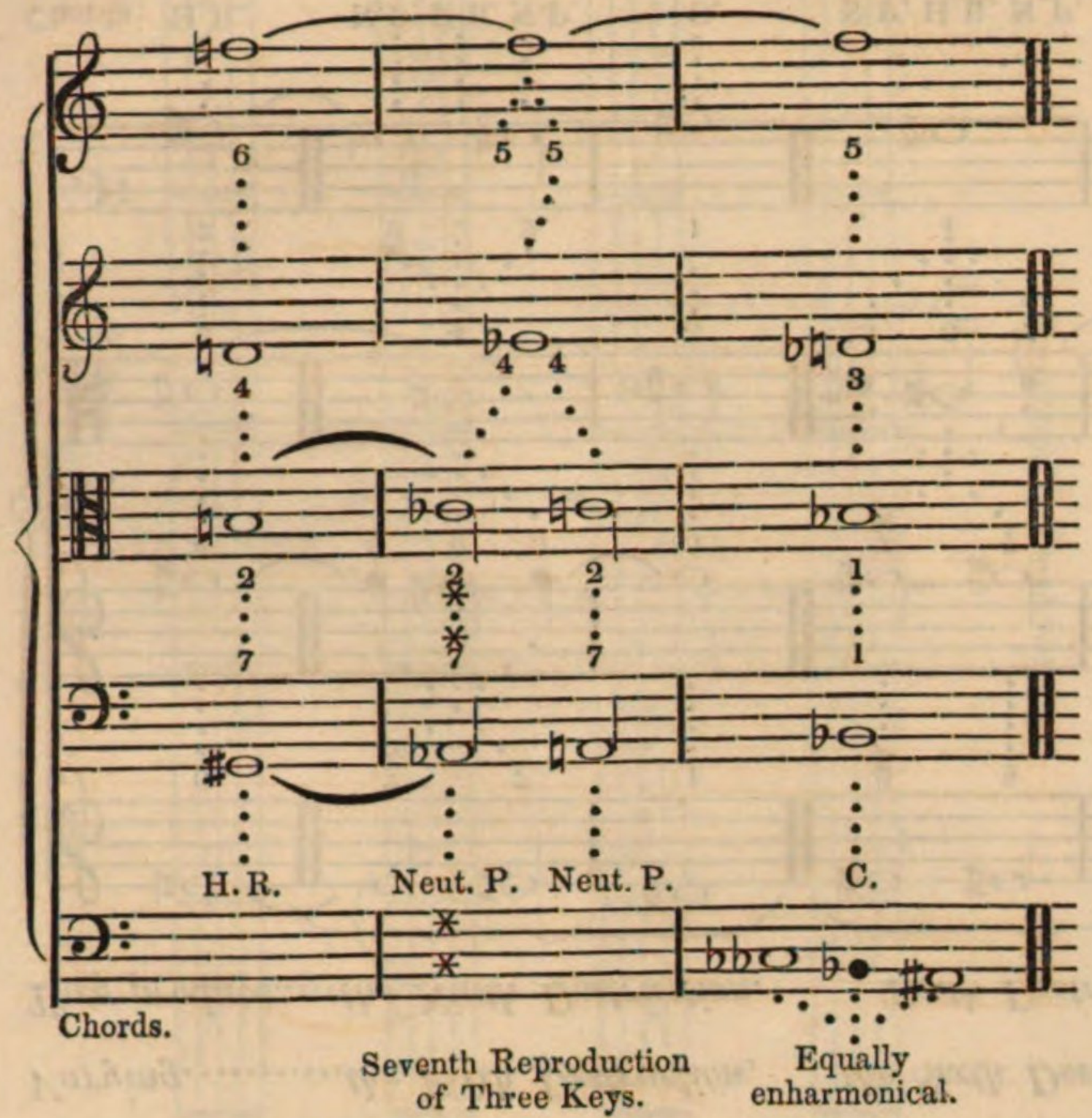


Chords.

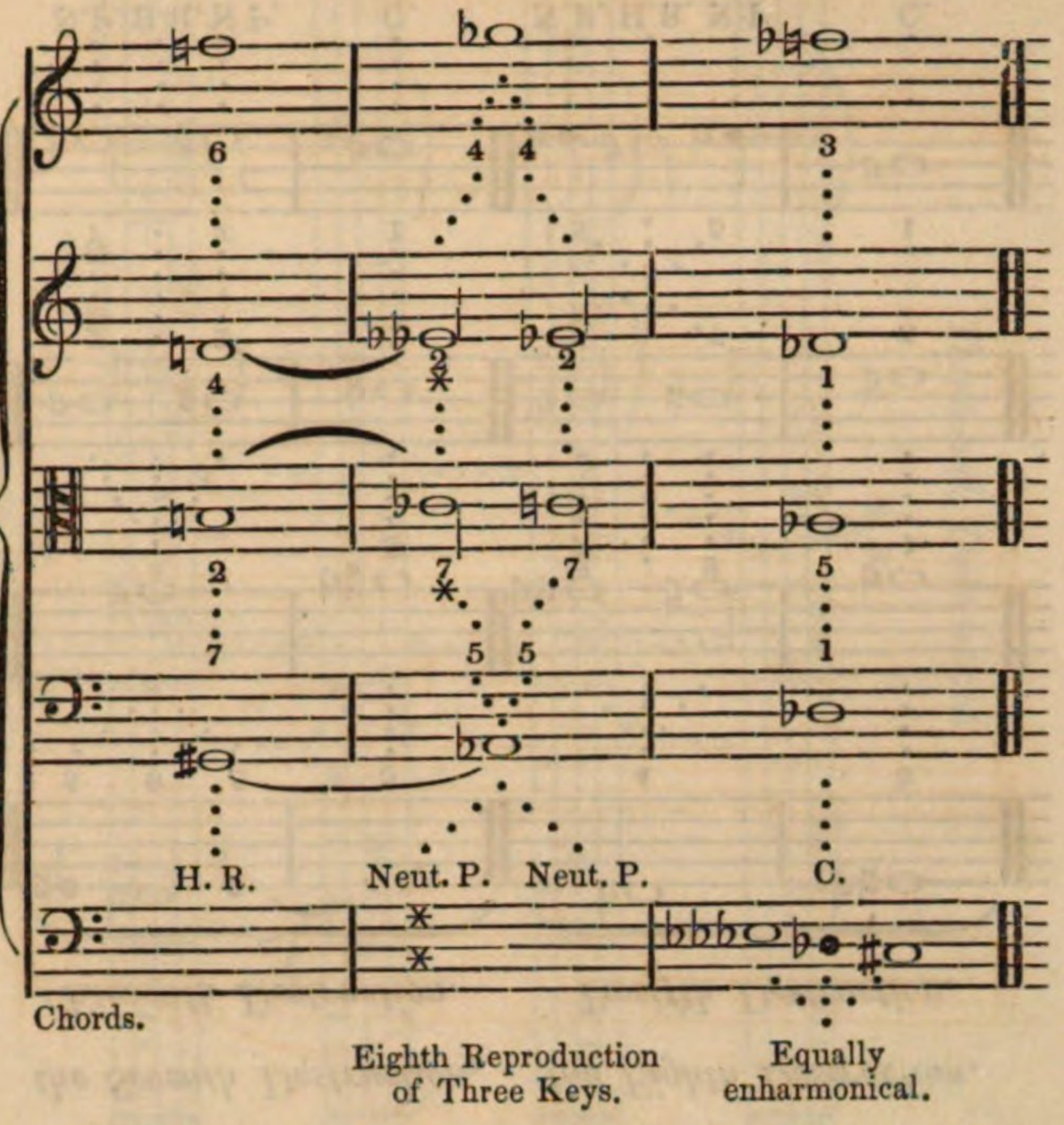
Sixth Reproduction of Three Keys.

Equally enharmonical.

Seventh Destruction.

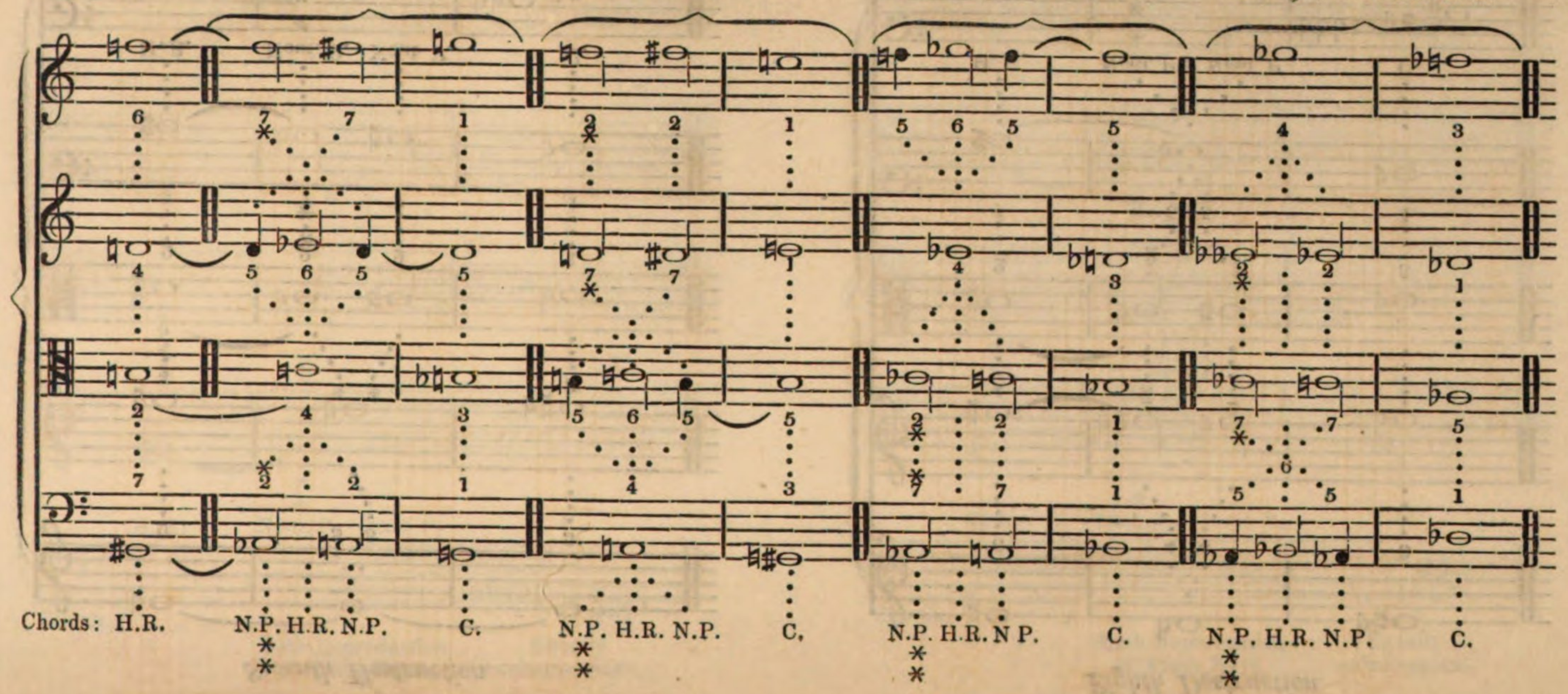


Eighth Destruction.

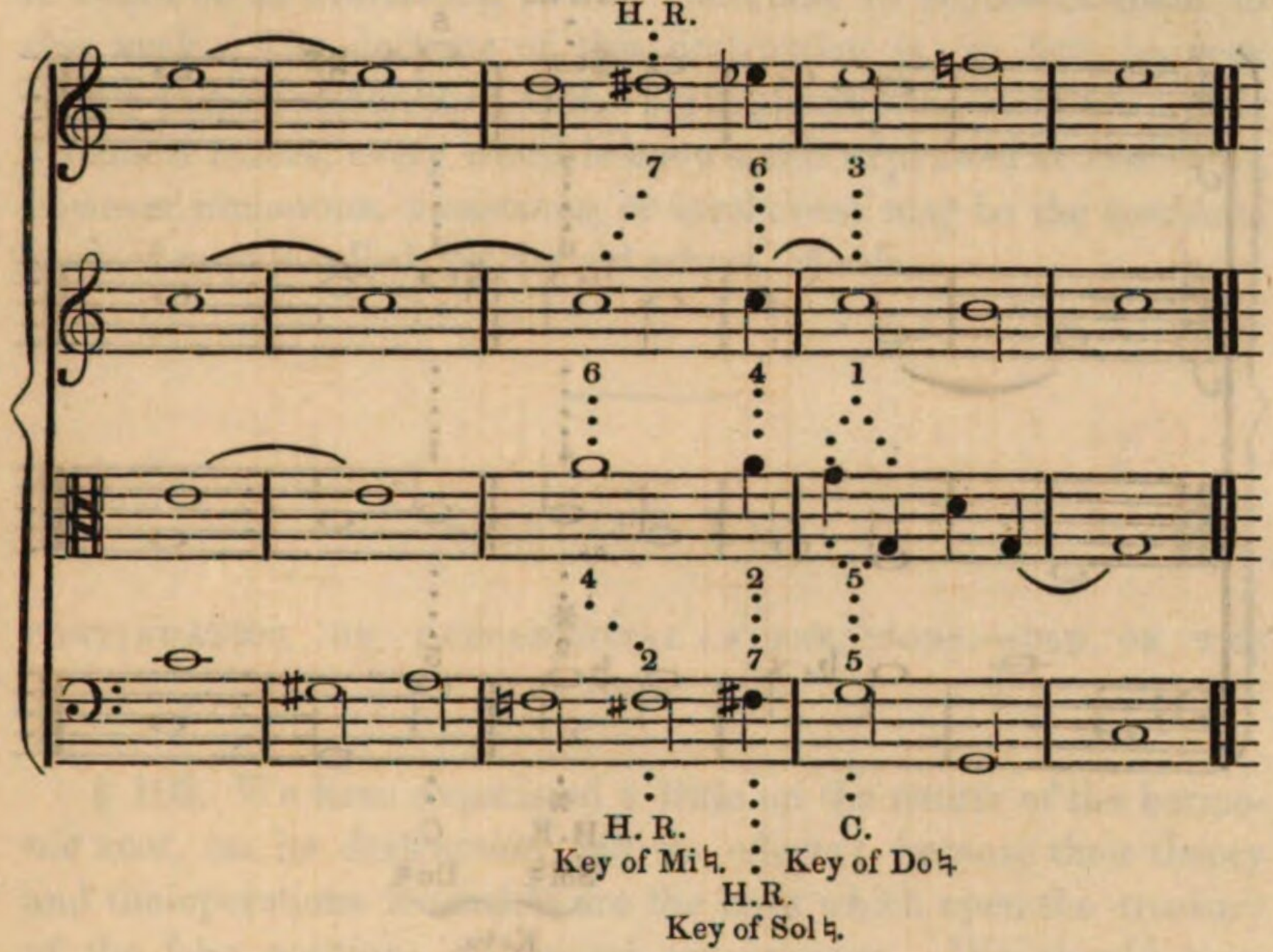


Varying.....the Fifth Destruction, the Sixth Destruction, the Seventh Destruction, the Eighth Destruction,

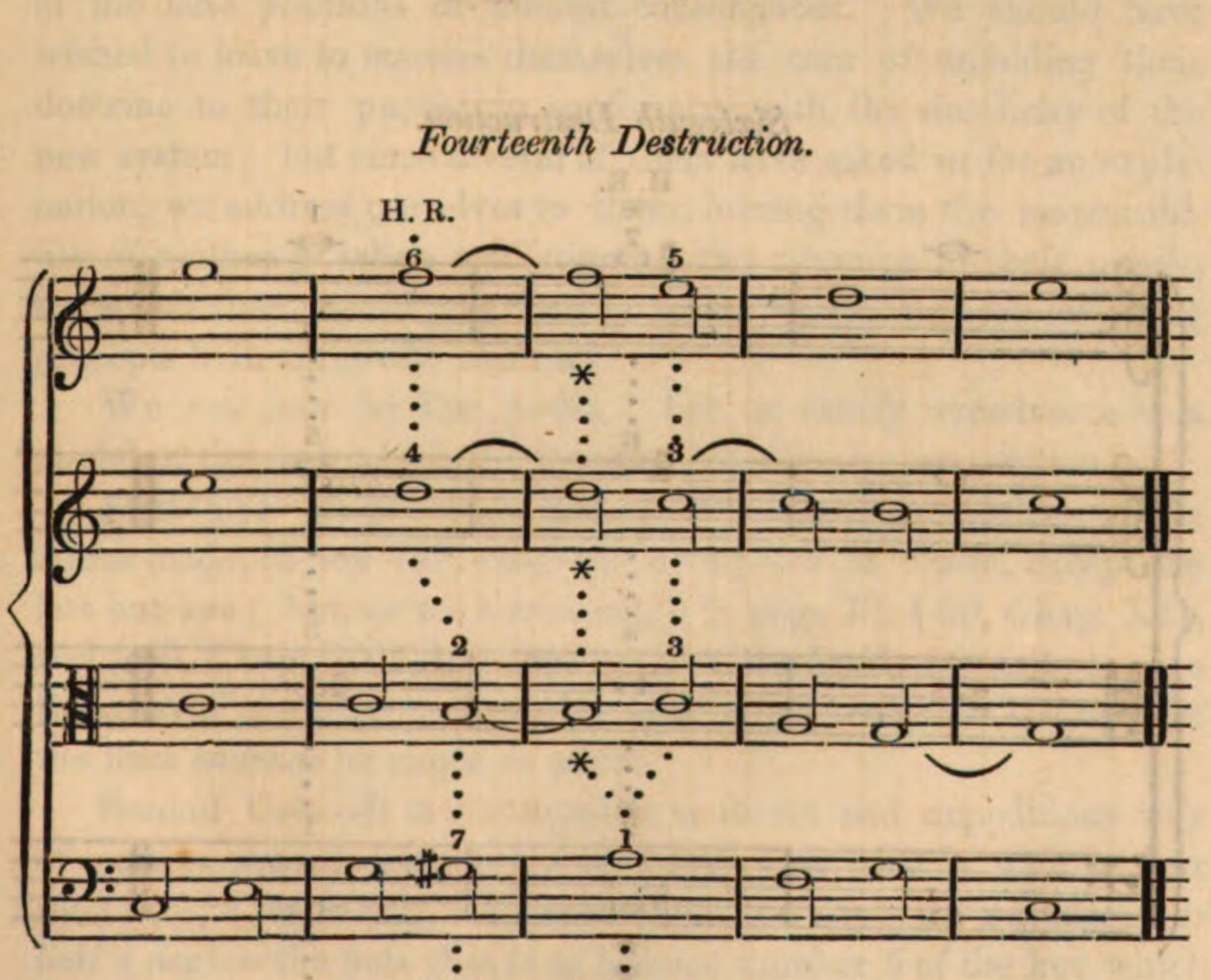
They produce.....the Ninth Destruction. Tenth Destruction. Eleventh Destruction. Twelfth Destruction.



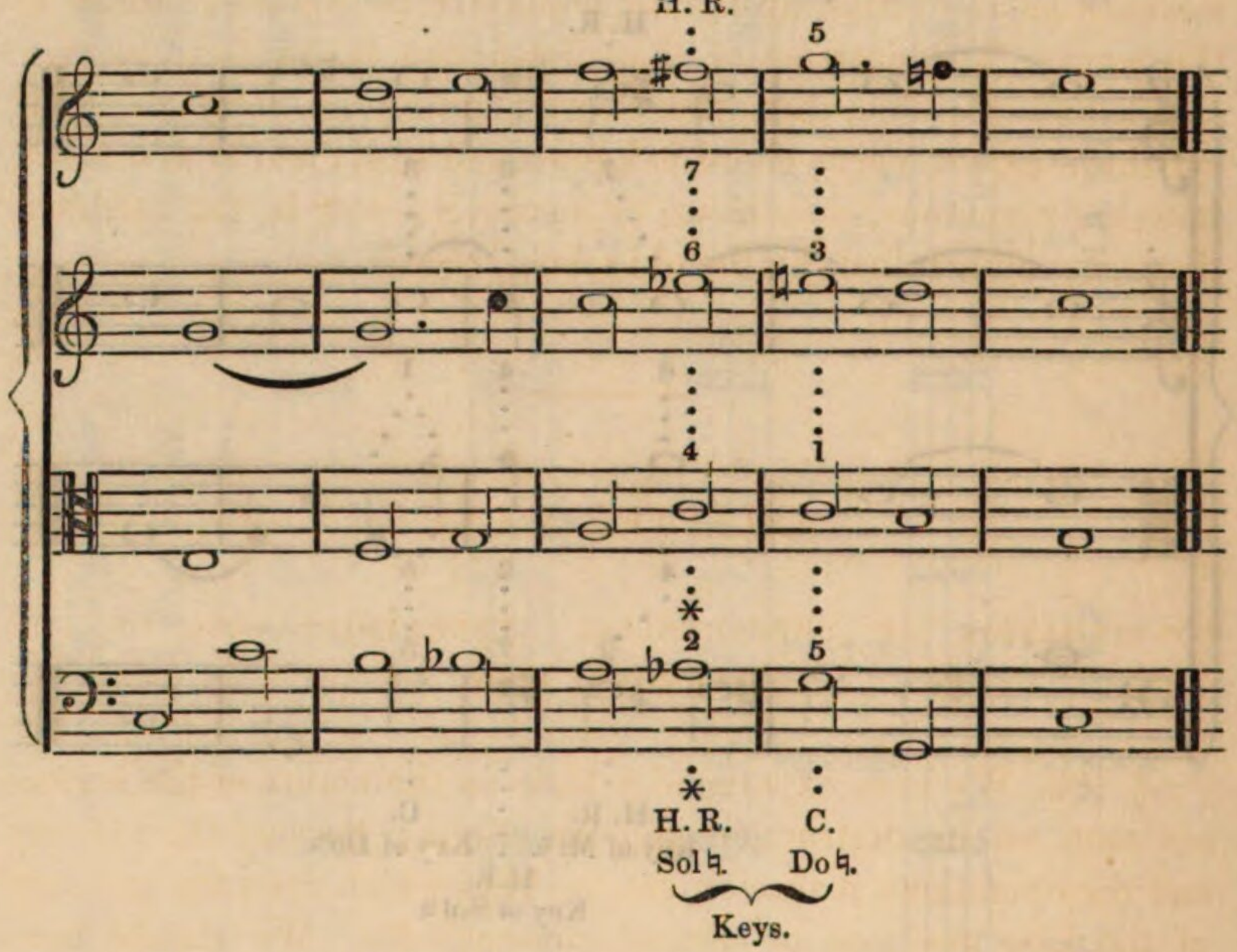
Thirteenth Destruction.



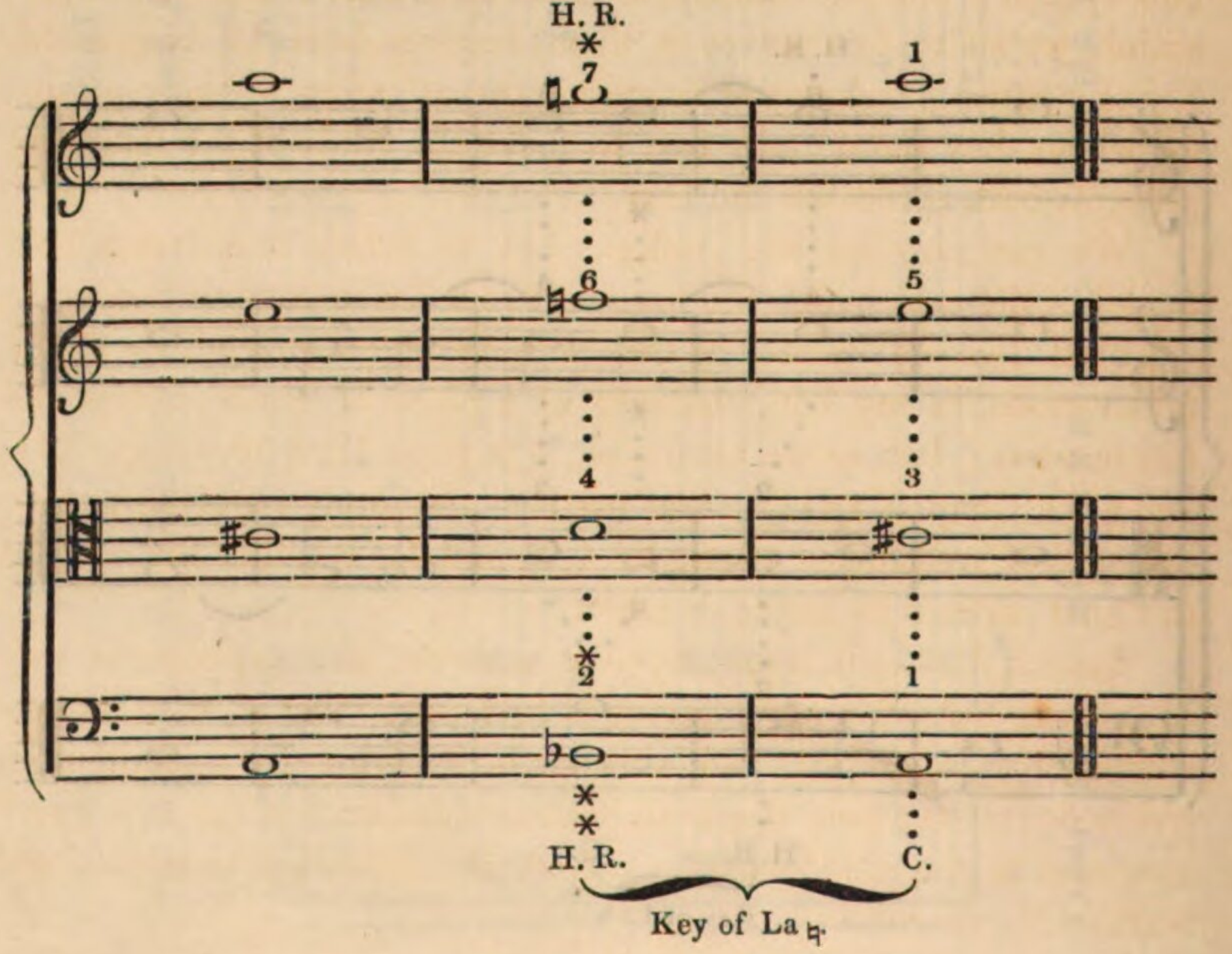
Fourteenth Destruction.



Fifteenth Destruction.



Sixteenth Destruction.



As all chords or combinations possible in multiple melody, or harmony, proceed from the alterations or *destructions* of this chord, it would be an everlasting task to undertake to represent them in this work. The doctrine of this destruction is, in fact, so very simple and infallible, that, with only cyphering the notes and their syllabical names, every chord is known and explained at first sight, however numerous, monstrous, or incoherent may be the combinations of soumds called, by the old school, *chords*.

CHAPTER XXXI.

CONTINUATION OF PRECADENCIAL ALTERATIONS.—USE OF THE HARMONIC ROOT.

§ 102. We have expatiated a little on the nature of the harmonic root, on its destruction and its effects; because their theory and the operations it teaches are the keys which open the treasury of the false positions or altered consonances. We should have wished to leave to masters themselves the care of unfolding their doctrine to their pupils, in conformity with the simplicity of the new system; but since several of them have asked us for an explanation, we address ourselves to them, leaving them the responsibility of neither puzzling nor fatiguing the attention of their pupils, for whom they should take care to make the study of the following precepts both agreeable and easy.

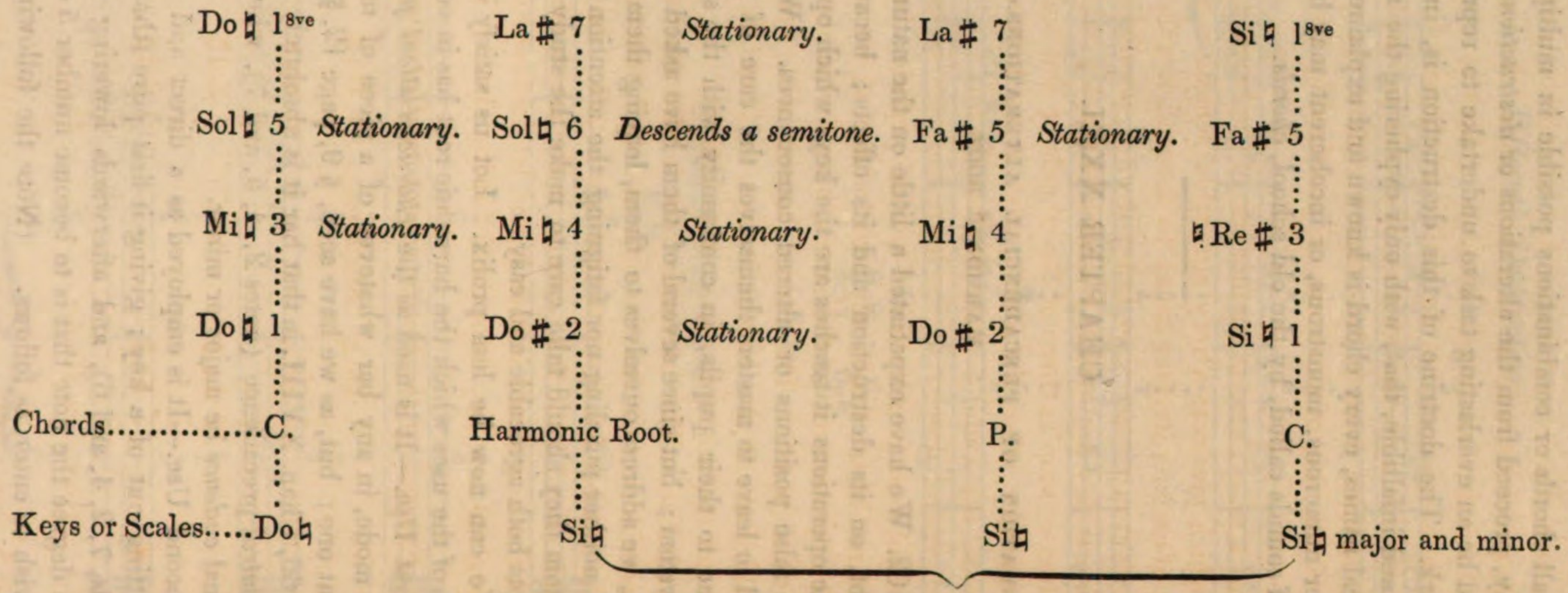
We can now be less prolix. Let us satisfy ourselves with a model of the uses which the harmonic root has in composition.

First Use.—It is used as the *characteristical precadence* of the minor mode, in any bar whatever of a piece of music, except the last but one; but, as we have seen, § 9, page 12, § 39, Chap. XII, and § 66, Chap. XVIII, in that bar it is absolutely requisite to give the *neutral* precadence (notes 2, 4, 5, and 7), whether the *mode* of the final *cadence* be major or minor.

Second Use.—It is employed as a direct and expeditious way of getting out of a key; giving it first pure (that is, with its four sounds, 7, 2, 4, and 6), and afterwards lowering by a semitone or half a degree the note that is to become number 5 of the key which you wish to enter, as follows. (Note the following example, and wait for its execution.)

Example.

Transition from the Key of Do♮ *major to that of* Si♮, *both major and minor.*



This way of passing from one key to another is extremely fertile in results delicious to the ear; since it causes the looked-for key to appear at the first command, however distant it may be from the one just left—a secret that no author of theories has yet revealed. Every time that a greater number of chords is employed to change the key, nothing more is done than to follow the guidance of the ear, or, if you like, of the scent, as practised by the blind man and his dog.

Third Use.—There is another use of the harmonic root, 2, 4, 6, and 7, which produces a very agreeable sensation to the ear. It consists of causing its four notes to descend together by semitones as often as it is necessary to bring it on a parallelism or level of intonation with a key which you wish to reach; which key will be established as soon as three of the sounds of the harmonic root remain stationary, when the fourth, after being lowered a semitone, will present the sound 5 of the key sought for.

This general descent of the harmonic root is one of the most delicate and most penetrating of musical periods: for which reason, it should not be too frequently resorted to: as we ought to refrain from all vehement use of the senses, even in the most innocent and virtuous affections. The reader himself will write an example of this third use of the harmonic root. There is no doubt that he does not require us to dictate it to him.

Fourth Use.—The harmonic root is also most agreeably used, when, considering the inferior note as note 7, and raising it a semitone, the number 5 is given to that new sound. In this case, place above this sound 5 the full *cadence*, in the minor mode, of the key in which that new sound is note 5, and let the four sounds of the *precadence* of the new key form the following chord; in this manner:

Example of the Fourth Use of the Harmonic Root.

4 Do♮	*Stationary.*	1 Do♮	7 Si♮
⋮		⋮	⋮
6 Mi♭		3 Mi♮	4 Fa♮
⋮		⋮	⋮
2 La♮		5 Sol♮	2 Re♮
⋮		⋮	⋮
7 Fa♯		5 Sol♮	5 Sol♮
⋮		⋮	⋮
Chords.....Harmonic Root.		C.	P.
⋮		⋮	⋮
Keys or Scales....Sol♮		Do♮	Do♮

This use of the harmonic root is certainly very agreeable; but we must advise our reader that it is so often repeated in modern music by the poor composers (that is to say, by composers of poor invention), that its repetition is indeed the cause of all their works resembling each other, like so many eggs.

Fifth Use of the Harmonic Root.—Another use of the harmonic root consists of its destruction by *raising* one of its sounds a semitone; an operation which produces the neutral precadence, altered in the way we have already seen it in several foregoing examples of counterpoint. The following example will serve as a model for the reader, who, after having noted it, like all the former ones, will apply this fifth destruction of the harmonic root, here presented in the keys of La natural minor and Mi natural major, to all other keys he may think proper.

Example of the Destruction of the Harmonic Root producing, in an imperfect state, the Neutral Precadence, which afterwards requires to be resolved, as do all Dissonances which are not typometric.

Harmonic Root.		Its Fifth Destruction.
6	Fa♮	2*
4	Re♮	7*
2	Si♮	5
7 Sol♯	ascends a semitone to	La♮ 4

Harmonic Root. Neutral Precadence with two notes * * of different keys, which render it imperfect.

La♮ Mi♮

Keys.

Intervals arising from that Fifth Destruction.

2* 7*	Single minor third, consonant.
2* 5	Double minor third or tritone, consonant.
5 4	A second, destroyer, dissonant.
4 2*	Major third, destroyer, dissonant.
7* 4	A fourth above, equal to a fifth below, dissonant on account of the concealed major third, Fa♮—La♮.
7* 5	Minor third, consonant.

We have seen, in the former examples of counterpoint, the frequent repetition of the *precadence* altered in the same manner as in the anterior example. We have there shown to the reader, that the names of the notes (even when defective, on account of their want of the new alterative signs which are always grafted upon them by the destructive dissonance 4 and 5) are sufficient, when the melody is not going to change its key, but only to *modulate within the mode* (that is, within the reigning scale—see Chap. XXII, § 77, p. 205), for them to represent the *numbers* of the new key to which they would belong if they had those alterative signs. We see here, for this reason, the *Re* 7 and the *Fa* 2 followed by the cacophonic sign (*), to give notice that, in the perfect order, they ought both to be *sharp*, and not *natural*. This *precadence*, therefore, offers a *chord* of *second major*, *perfect fourth*, *minor sixth*, and *diminished fifth*. What will the reader say, or even his master, when he will see a destruction of the harmonic root discovering with so much simplicity, not only the origin of that fundamental bass, *Mi*, the cause of so many controversies, but even the nature and derivation of one of the chords, the most complicated which the art has invented, without ever explaining or even knowing its generation? Enough on this subject: let us pass to the other alterations of the *precadence*.

Second Alteration of the Precadence.

§ 103. We have seen, § § 97 and 98, Chap. XXIX, which § § teach of the first alteration of the precadence, and especially § 102, that the harmonic root performs the office of a *peculiar precadence* to the *minor mode*, at the composer's choice and pleasure, except in the last part but one of the time or chord of the piece, which rigorously requires the *pure neutral precadence**. We will now speak of another alteration, peculiar to the major mode, which we will call *false precadence*. The alteration is made with the same note, that is, by substituting number 6 for number 5, in this way: *Si*♮, 7, *Re*♮, 2, *Fa*♮, 4, *La*♮, 6.

To this chord the ancient school gives the denomination of the *chord of the seventh on the sensible*, with a string of other names no shorter than the legion of those we have partly named in the five or six preceding § §. The office or use of the *false* or *immodic precadence*—viz. of this second alteration in the *major mode*—is the same as that of the first alteration, namely, of the harmonic root, or

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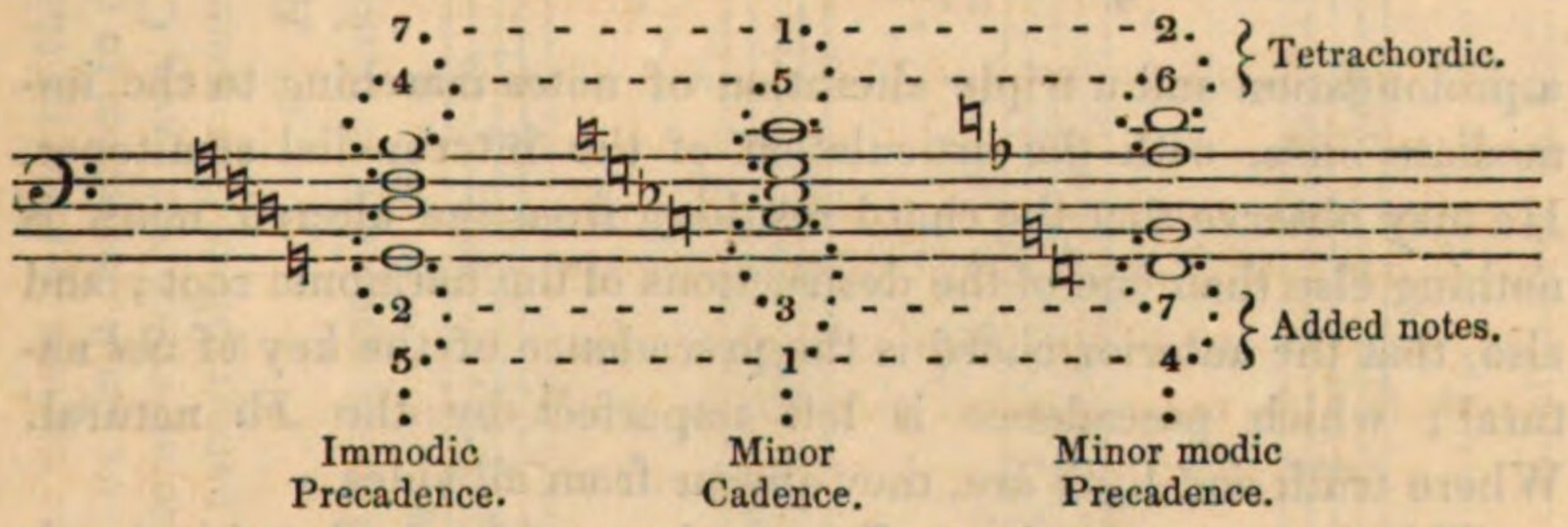
* See Chap. VII, § 24, page 121.

the *minor modic precadence* in the *minor mode*. As to its origin or generation, we have already seen it in the fifth use and the fifth destruction of the *harmonic root*, which has presented to us this same chord as follows :

Fa natural, 2*.
Re natural, 7*.
Si natural, 5, } a second, destroyer.
La natural, 4, }
⋮
Precadence, with two dissonances * * of notes belonging to a different scale or key—viz. the key of Mi natural major.

To the preceding statement and development of the subject of the harmonic root; to the explanation (a discovery so fertile in results) of a fact which reveals the origin of all precadencial chords —viz. of all chords, except the thirty cadences of the thirty keys in use, and the inversions of those cadences; finally, to the explanation of a principle that demonstrates the cause of several marches of thorough bass (which hitherto could never be accounted for); we cannot refrain from adding two examples, as curious as they are instructive. In the following one,

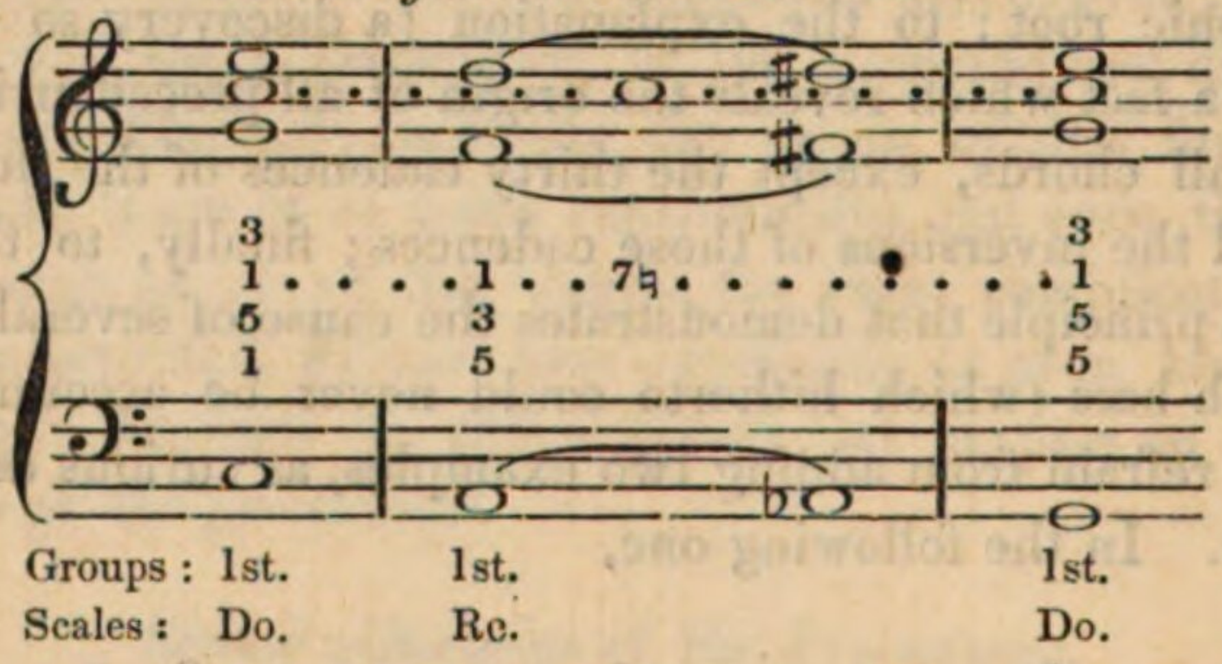


our reader may remark, that with two of the notes of the second chord, and the four notes of the third (both chords belonging to the minor mode), he can form the two triplets *Fa, Sol, La* flat, = *Si, Do, Re*. If he places them above each other, the lower one always below, he will find them to represent—first, the neutral precadence, *Fa, Si;* 2ndly. the immodic cadence, *Sol, Do;* and 3rdly, the minor precadence, or harmonic root, *La* flat, *Re*. These three groups do therefore admit of, even require, the company of the other numbers and notes which complete these chords; the first of which rests on *Fa, Si;* the second on *Do, Sol;* the third on *La* flat,

Re. These are the constitutive groups claiming for the sounds which have been *added* to them, as indicated in the example, in which the said sounds are placed at greater intervals, to be more conspicuous. Our reader is also requested to notice that the superior interval, in the three chords, is of the extreme sharp fourth or tritone in the first, *Fa, Si ;* of the natural fourth in the second, *Sol, Do ;* and the extreme sharp or tritone again in the third, *La, Re.* The said three groups are accompanied by their inferior sixth, marching in diatonic ascent: *Re, Mi, Fa:* and by the typometric bass, *Sol, Do, Si,* which is the true one of the harmonic root, though purposely, in this example, the *Si* was made to be articulated by an interior voice.

Now our reader will see demonstrated, in the following example,

Prolongation and Alterations.



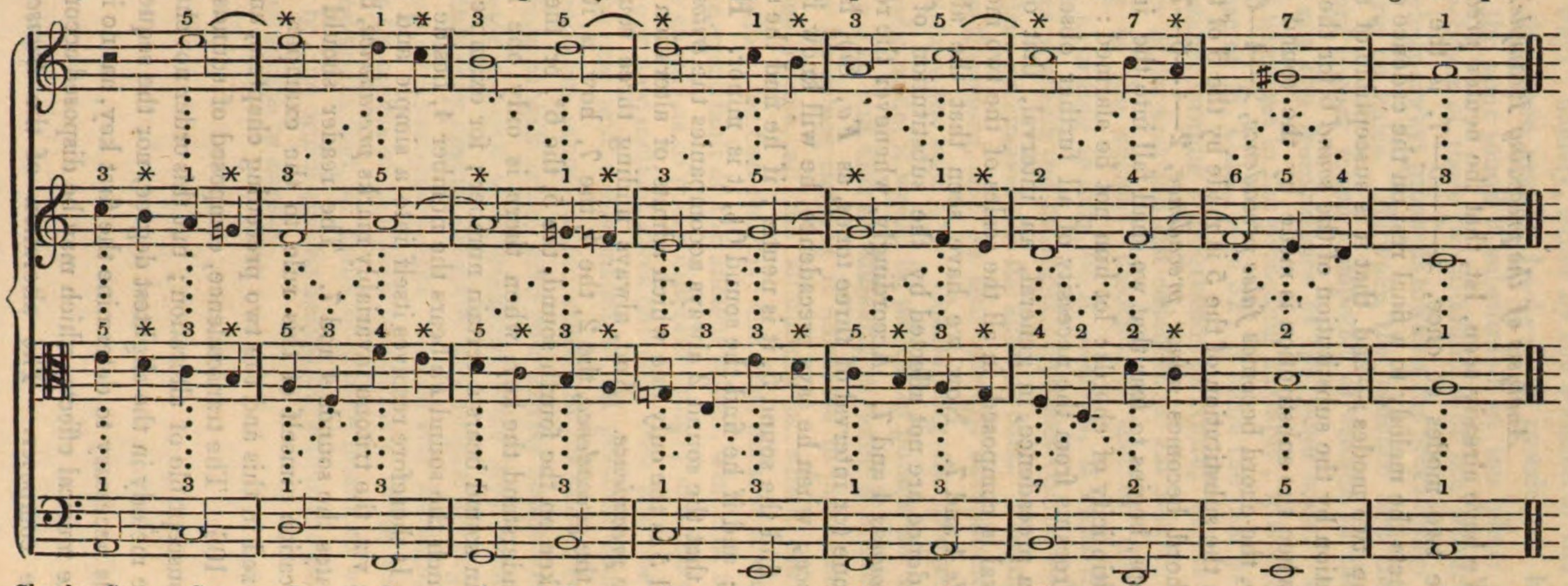
a prolongation and a triple alteration of notes marching to the immediate ones, with the articulation of the intermedial semitones. He may observe that the chord resulting from the altered notes is nothing else than one of the destructions of the harmonic root ; and also, that the anterior chord is the precadence of the key of *Sol* natural ; which precadence is left imperfect by the *Fa* natural. Where truth and light are, they appear from all sides.

This short examination suffices to show evidently that this chord, as all dissonant chords, proceed from the amalgamation of distinct tonics—i. e. of different scales ; and, nevertheless, that, as it does not present any *new alterative sign,* it does not expel the reigning key. Thus this chord, which essentially belongs to the key of *Mi* natural, does not expel the key of *Do* natural ; because it has not parted from it by putting *sharps* to the *Re* and *Fa,* both of which are preserved *natural.* Finally, it is clearly seen that the generation or origin of the *false or immodic precadence* is the destruction of the *harmonic root,* by means of raising one of its notes a semitone —i. e. the *Sol* sharp to the *La* natural.

§ 104. It already seems to us useless to offer to the reader, one by one, *all* the alterations of which the *precadence* is susceptible; and we shall therefore limit ourselves to offer him a succinct recapitulation of the rules relative to the alterations of the precadence, a glance at which we gave, Chap. VII, §24, page 121, and of which we have been speaking from the beginning of the preceding paragraph to this moment, which recapitulation we shall extend to the transcadence.

Recapitulation.

§ 105. The clearer and the more speedily to make it, let us proceed to the examination of the following example:



Analysis of the preceding Example.

We have already seen, 1st, that the neuter *precadence,* or that of the two modes at once, 2—4—5—7, is the only one which conducts the melody to a final rest on the cadence of one or other of the two modes;—2nd. that it is susceptible of an instantaneous alteration by the substitution of the *sound* 6 for the *sound* 5;—3rd. that when the substitution is made by the sound 6 of the major mode, the chord becomes *false precadence,* 2—4—6—7;—4th. that when the substitution of the 5 is made by the 6 of the minor mode, the chord becomes *minor precadence,* 2—4—6—7. The reader, perhaps, begins to fear that we shall fall into the inconvenience of a multiplicity of chords: let him not be alarmed: there is a guide that frees us from the necessity of all further observation. There is in a precadence, in general, an interval, that of tritone. This interval is composed, in all the scales of the two modes, of the two *sounds* 4 and 7. Now we have seen that the alterations of the precadence are not affected by the substitution of either of these two *sounds* 4 and 7. Accordingly, whenever the reader meets with a tritone (or interval of three tones, as *Fa, Si*), he will say *precadence;* when he says precadence, he will know its character, for if he find the sound 5, it is neuter; if he find the sound 6*, it is false; and if he find the sound 6♭, it is minor. Hence it is also clear that the sound 2 always accompanies the *tritone,* although the sound 5 is the only one which admits of alteration or substitution in the *precadence.* And, always finding three sounds inseparable from the *precadence,* the 2, the 4, the 7, how is it possible to be mistaken on the fourth sound, the 5, the 6*, or the 6♭. Or, how misunderstand the key, when there is only one key in which a certain sound bears a certain number; for example, there is no key in which the sound *Fa* bears the number 4, beside the key of *Do,* &c. It therefore resolves itself into a simple and unexceptionable rule; viz. the tritone invariably marks *precadence,* because it always indicates the sounds 4 and 7. The reader should now make the application himself of this rule to the examples which we have analyzed in this and the two preceding chapters, and then continue.

§ 106. The transcadence, composed of sounds 1—4—6—1, is also susceptible of alteration; but this order not changing the order of the melody in the slightest degree, nor the sequence of the three chords necessary to determine the first key, has no influence, except on the musical effects, which may be disposed according to the taste of the composer. The alteration of the *transcadence* may be

effected in two ways : namely, either by the addition of the sound 2, and allowing the three sounds 1—4—6 to remain, or by the introduction of the same sound 2 substituted in the place of the sound 1. Whichever of these two alterations of the *transcadence* be used, the melody always proceeds towards the precadence. This operation requires no rules. Between the cadence and the precadence, no chord is ever found composed of sounds of the same scale which is not the *transcadence* of the same scale. This is sufficient. Let us revert to the preceding example ; it is extracted from the Treatise of M. Catel, page 52 ; it bears the title of "Retardation of Octave, forming a progression of Ninth," and is in four parts. The key of its first and last cadences is *La* minor, which key, according to the ancient theories, is that of the whole example ; but according to ours, be it observed, it runs through many other keys of which the cadences, or perfect chords 1—3—5, present themselves successively in the anterior bars. Passing notes being foreign to the chord, and on that account cacophonic, bear no number, but have the sign (*). Considering the progress the reader has already made, it would be useless to pursue the analysis of this example ; he will find no difficulty in doing it himself.

§ 107. We have not thought it advisable to place before the reader's eye, one by one, all the alterations of which the precadence is susceptible, for two reasons : the first, because it would be falling into the great fault of the ancient school, which is, to teach all the possible chords as so many different things ; and the second, because, since our new method gives one only rule and one single principle for the use and management of all possible chords, no difficulty or doubt can occur to the reader or his master concerning the immediate as well as the sure and correct resolution of all musical problems relative to dissonances, were they even treble. We shall, for this very reason, conclude this chapter by requesting all the professors and composers, both British and Foreign, to inform us, either by means of the press or privately, of the discovery of any case they might find, or think they have found, of whatever nature it may be, the origin and formation of which the preceding pages would not suffice to explain.

CHAPTER XXXI.

DIVISION OR STRUCTURE OF MUSICAL PIECES.

§ 108. We arrive at last to the structure or distribution, and to the contexture or weaving of the composition of pieces of music. The names of the various pieces are numerous, and known by all amateurs and all musicians, for which reason we omit them.

Their structure or distribution consists: 1st. in *members;* 2ndly. in *phrases;* 3rdly. in *periods;* 4thly. in a mediation or repartee; 5thly. in an air or discourse, or tune, which forms all the parts of a complete piece.

The members of a phrase are properly the rhythm, the movement, and successive alternateness, from which the notes take their value. Thus, the members of a phrase can be examined, approved, or disapproved at first sight. All the great men of the art have had a scrupulous care not to deprive their compositions of that beauty; and when they have sometimes not been able to give a symmetric value to some members of the melody, they have taken care to contrive that it should not fail at least in the accompaniments.

Practice of itself shews this rule so clearly and teaches it so easily, that we could almost omit it in this lesson; but nevertheless, in case one of our readers should not be acquainted with it, we will here give a short idea of it.

Paesiello's Cavatina, which, with its harmonization, we have given to our readers, Chap. VII, § § 29 and following, page 123, is composed of two *mediations* or *replies;* every reply is composed of two *periods:* each period of two *phrases;* each *phrase* of two *members.* The first mediation is ended at the eighth bar, after the words "*anima mia sei tu;*" and according to another reading, "*amor sei colpa tu.*" The second, at the sixteenth bar, after the words "*pietà, pietà.*" And the author causes the second period of the first mediation to return, in order to conclude the air with that period.

Let it be observed how, in the first mediation, each couple of bars, which is a phrase, resembles another couple in the value of

the notes which are its members. Let it be observed how, in the first period, each phrase consists of three chords; and how, in the second, each phrase has four chords, and each member two. This is the reason why the ear perceives a sensible difference in the rhythm, march, or noted alternateness of that period. But enough of such trifles.

§ 109. At this stage of our lesson on musical composition, we recommend to our readers to refer back to Paesiello's Cavatina just quoted; and we invite them to harmonize again that charming air, not only as they have already done with our assistance, but also with four voices, in flourished counterpoint, in double, triple, and quadruple counterpoint at the octave, taking the melody for the *motive*, sometimes at the bass, sometimes at the soprano, and sometimes at the intermediate parts; by which means they will compose a valuable series of variations, in perfect counterpoints, the execution of which will give them complete satisfaction, and prove to them that we have fulfilled all our promises; for we suppose that, at the moment they are reading these lines, they are probably engaged in acquitting themselves of the agreeable task which we have imposed upon them, a task which they will probably perform without committing a single error.

CHAPTER XXXII.

The best means, indeed the only one now left to us, of completing or confirming the instruction we have given to the reader in the science of harmony, counterpoint, and composition, is to advise him to select and examine a piece of a scientific and complicated score, among those the execution of which has caused him most pleasure, and especially the *greatest admiration*, and of which the *mechanism* and *art* have appeared to him impossible to be comprehended, the movements and combinations of which he has not been able to unravel, or to discover the variety and depth of its harmonic contrivance. Let him make that examination, pencil in hand, and put to each voice or instrument the *typometric* cyphering belonging to it. He will soon see, as clearly as the light of a fine

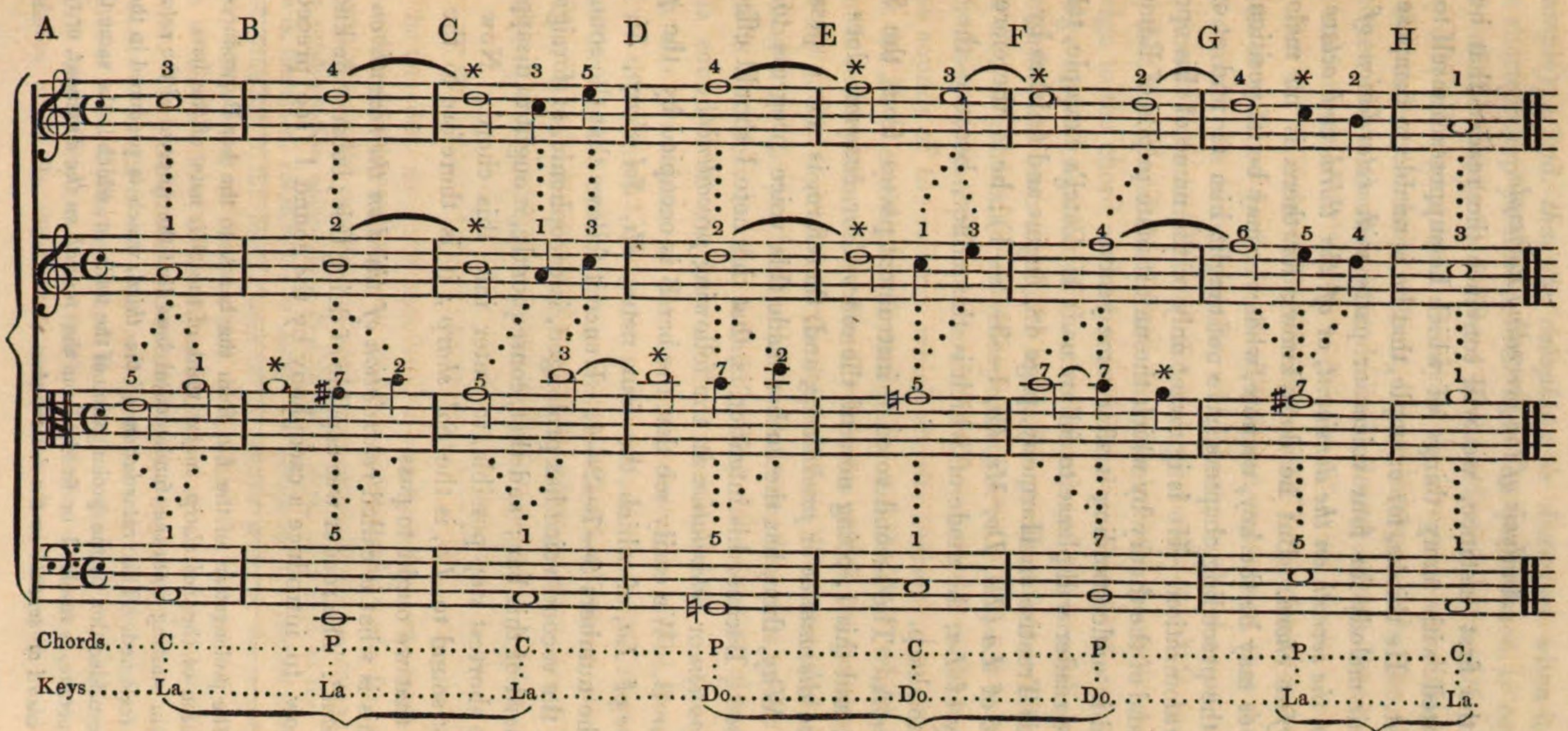
day at noon, that the author of such a score, to compose and complete so difficult a piece, has not made, nor could he make, one single dot more or less than our reader has hitherto learned by the simple but careful perusal of this work. Our principal purpose in advising such an examination, is not precisely to convey that conviction to the reader, however useful it may be, but that he may learn the way of cutting and distributing sentences and periods with more propriety and grace; since, for obtaining that talent, the study of a single model is far preferable to the perusal of a whole folio volume of rules: for this very reason, we here dispense with those of the structure or construction of different pieces of music. But we think it advisable, in order to increase still more our pupil's facility in the execution of the task we here impose upon him, to present him, in this chapter, with a two-fold model of that execution. And, besides, according to our system, it is by decomposing that we learn to compose. We might perform this exercise on the same air of Paesiello which served us for harmonization; but as, in that air, we had in view those of our readers who practise the piano-forte, or single vocal music, we must now turn our attention to the practitioners on bowed instruments. To this end, the examples which we intend to go through is adapted to the comprehension of both parties; if, as we have a right to suppose, they all understand, by the exercise of solfaing, the reading of the keys of *Fa* and *Do*.

We will now attempt, with our reader, the examination which we solicit him to try afterwards by himself. The next examples will serve him as models by which to work, with two very distinct purposes, his favorite air or piece.

He will take notice—1st. that we have marked every bar by a letter of the alphabet; 2ndly. that we have placed over the harmonic notes of each measure the number that they bear in the key, or in the scale in which they present themselves, or through which they pass, and that over all the four voices or the four instruments; 3rdly. that we have placed at the bottom of the score the letters P. C. which signify *Precadence*, *Cadence*, and the keys to which they belong; 4thly. that the passing notes, anterior or posterior to the harmonic note of each time, bear no number, and that they always make a movement of only a single degree to enter the harmony.

The two pieces which we are going both to cypher and analyse in two different ways, are, first, a Quartet by M. Catel, and, secondly, a Minuet and Trio by Haydn.

Example.



Analysis of the preceding Example.

In the first instance, we will convince the reader that he is acquainted with many things of which he supposes himself to be ignorant. He thinks, for example, that he is unable to compose an harmonic melody for four voices or parts *with retardation of the third on the seventh on the dominant*, or *of the third and octave on the perfect chord.* But he does know; for there is no melody, whatever may be the key, no note, whatever may be its position, of which the preceding chapters have not taught him to find at once the harmonization. He is ignorant only of the name of this operation, and of the theory by which the unfortunate pupils of Rameau succeed in understanding it after some years.

The reader will please to follow us. M. Catel's example, taken from his Treatise on Harmony, page 48, begins and finishes by the *cadence* of *La* (*La, Do, Mi, La,* 1—3—5—1); he is therefore in the key of *La,* the mode of which is the minor, because the *Do* bears no sharp.

Bar A. The second voice or instrument passes from the 5 to the 1; and this 1, being note of the *concord* or *cadence,* does not produce *dissonance* or *precadence,* and, therefore, is not a passing note. Why, then, has the author made this voice progress to no purpose? Because his intention is, that this note 1 should effect a *prolongation* or *retardation* on the following *precadence.*

Bar B. We easily see that the bar B is occupied by the *precadence* of *La,* of which the four notes, *Mi, Sol sharp, Si, Re,* bear the numbers 5—7—2—4. Hence it follows that the sound 1, which the second voice has prolonged, is cacophonic, or foreign to the chord of this bar; and that, consequently, it ought to disappear, by the shortest step possible, to enter into this chord. Now the nearest sound to *La,* is the *Sol sharp;* it is therefore to the *Sol sharp* that we ought to pass.

This is what is called *retardation of third on the seventh on the dominant**. The reader was capable of doing this; because he knows, 1st. how to introduce a cacophony by the sound 1 (see preceding

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* The prolongation of the *La,* from the bar A to the bar B, produces the retardation of the *Sol sharp,* major third of the *Mi,* note of the bass. It is always in starting from the fundamental bass that the interval of the *retarded* note is reckoned. This *retardation of the third,* which is produced in the bar under consideration by the prolongation of the tonic, or, which is the same thing, of the octave, is resolved or finished on the *seventh on the dominant,* or rather on the *chord of seventh on the dominant.*

example); 2nd. *that the cacophony is destroyed* when it makes the shortest step possible; 3rd. that the precadence is composed only of the sounds 5—7—2—4 of the reigning key. Of what, we may ask, is he ignorant? Solely of the irregular and diffuse theory of the ancient methods, which, being interposed by the theorists between the student and the desired science, effectually obstructed his attainment of it.

Bar C. Herein we find the cadence of *La* profusely represented by its sounds 1—5—3, 1—3—3—5, and, moreover, that there are two sounds, the *Si* and the *Re*, which bear, in the key or scale of *La*, none of the numbers of the *cadence* 1—3—5. We therefore say, that the *Si* and the *Re* are cacophonic here, because they are foreign to the chord of the bar; we likewise observe that they are a vestige or prolongation of the two sounds of the preceding chord. The author has been careful to mark this prolongation or retardation by a sign of connexion, or syncope, thus ⁀. What is to be done with these two cacophonic sounds? They must be made to pass to those sounds of the cadence which are the nearest: but it will be said the *Re* is equidistant from the *Do* and the *Mi:* which movement is to be preferred? The Typometer settles the point at once. The *Re* is the sound 4 of the key of *La*. The sound 4, in proceeding from the precadence to the cadence, descends to the sound 3; it is therefore to the sound 3, *Do*, that we must pass. The *Si* is sound 2 of the key of *La:* the sound 2, in proceeding from the *precadence* to the cadence, descends to the sound 1; and to this sound 1 we must pass, and, in fact, this is precisely what the learned author of our example has made them do. This is what is called *retardation of the third on the seventh on the dominant*, and *retardation of third and octave on the perfect chord* *.

---

* In this bar, the *prolongation* in the melody of the *Re*, fourth of the tonic, produces the *retardation* of the *Do*, minor third of the *La*, note of the bass; and in the counter-tenor the *prolongation* of the *Si*, second of the tonic, produces the *retardation* of this same tonic, or rather of the octave. There is, therefore, *retardation of third and octave on the perfect chord.* In the following bar D, the *prolongation* of the octave produces the retardation of the *Si*, minor third of the *Sol*, note of the bass and seventh of the tonic. There is therefore here, in Bar B, *retardation of third on the seventh on the dominant.* The *prolongation* of the second and fourth produces, in the bar E, the *retardation* of the third and tonic or octave *on* or *in* the perfect chord. It is the same as in bar C, the key alone is changed. In the bar F, the *prolongation* of the *Mi*, third of the tonic, and fourth of the note of the bass, produces the *retardation* of the *Re*, third of this note and second of the tonic, and this is

Did the reader doubt it? No, certainly; and yet he was capable of doing it, for he knew how to retard sounds of one chord upon another chord. These retarding or cacophonic sounds bear in the example this sign (*).

The rest of the example presents a repetition of the same process up to the last bar but one, which prolongs no sound foreign to the cadence of the last. The reader may analyze it himself without paying any attention to the style of the examples.

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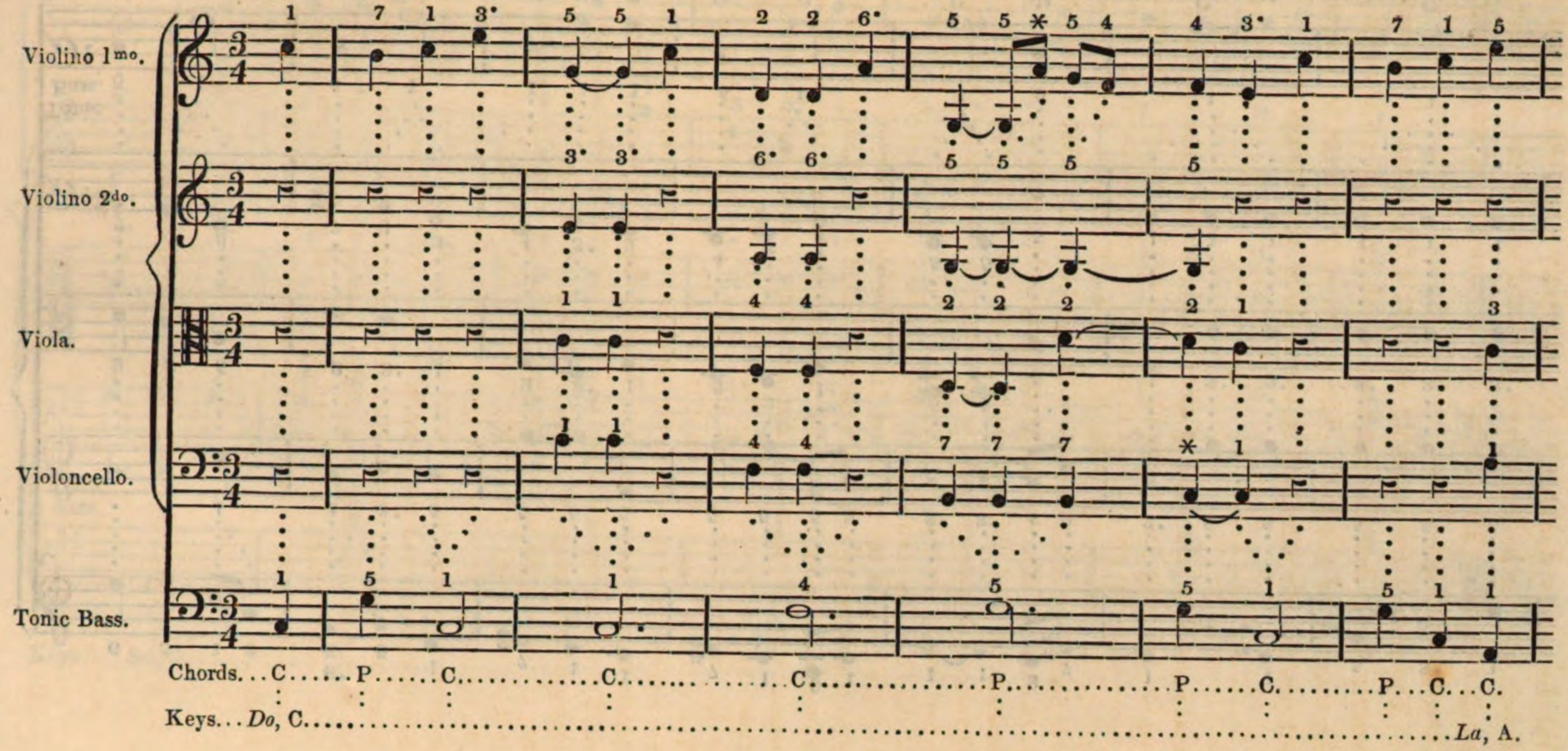
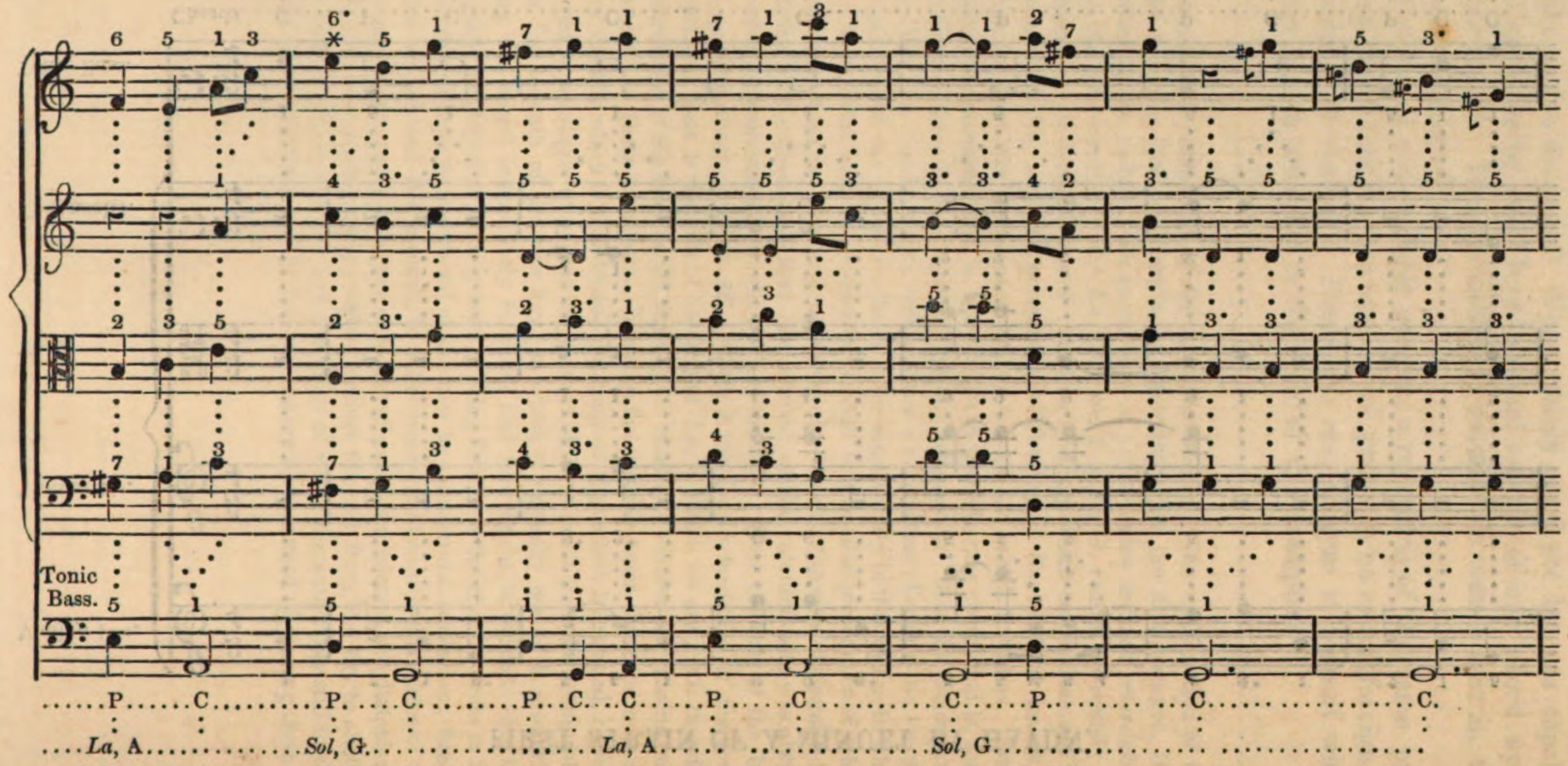
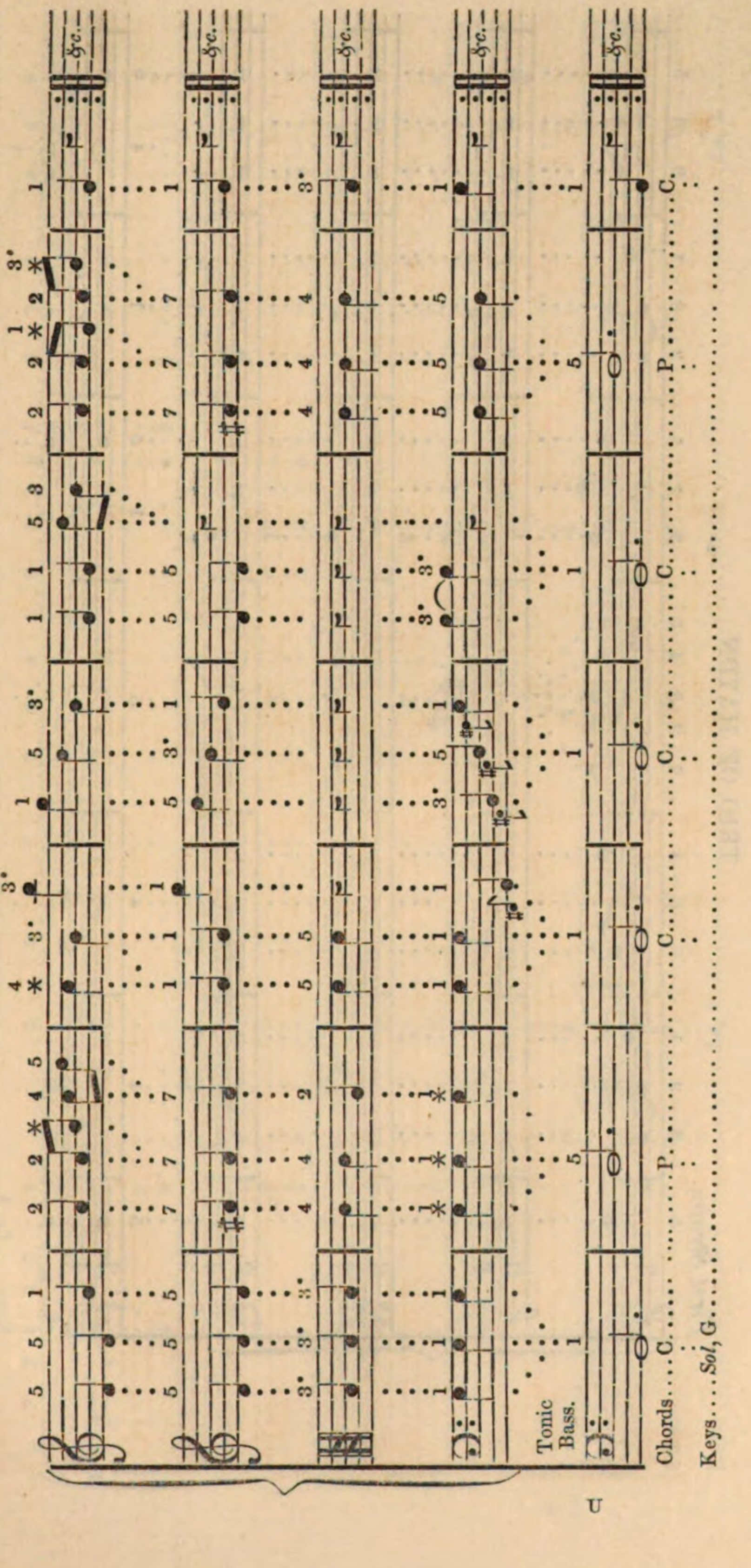
what is called a *retardation of third on the second.* The examination of this and the following bar is exceedingly interesting. In the first instance, they present us in the melody with an example of *prolongation without retardation.* In fact, the prolongation of the *Re,* from bar F to bar G, retards no sound; for it happens that, in consequence of the change of key which occurs from one bar to another, the *Re,* 2 of the precadence of the key of *Do,* which it leaves, is found to be 4 of the precadence of the key of *La,* which it enters. Since, therefore, the prolonged note is not foreign to the following chord, that is, forms a part thereof, there is, *prolongation,* and not *retardation.* But the prolongation of the *Fa,* in the counter-tenor, does produce a retardation; because the *Fa,* precadencial note of the key of *Do,* has not the same quality in that of *La,* in which it is transcadencial, and, consequently, foreign to the false precadence of which it retards the sound 5. By what name do the ancient theories distinguish this retardation? We have said that the interval of the retarded note was always considered to commence from the note of the bass. Here the note of the bass is *Mi,* and the retarded note is *Mi.* There is therefore *retardation of the tonic.* This retarded note is the fifth of the key of *La,* in which we are; it is therefore the *retardation of the tonic on the dominant.* And now observe the passing notes which occur in these two bars. Mark, in the counter-tenor, how the note *La,* sixth of the key which is abandoned, and tonic of that which is assumed, cleverly employed as *passing note,* softens the passage of the seventh from the relinquished key to the seventh of the new key, on which it naturally makes its resolution, it being the sound immediately inferior; and how again, in the following bar, *Do,* equally employed as *passing note,* it being foreign to the chord, softens in like manner the *passage* to the second of the new key, its natural resolution; finally, how the second and the seventh, in other words the two principal notes of the precadence of the key which they enter, as of every precadence, are diatonically led by these two passing notes, which conduct the ear from one key to another by an imperceptible descent, and the effect of which the author has still further softened by employing them in two successive bars, instead of placing them all in one.

Example.

FIRST STRAIN OF A MINUET BY HAYDN.

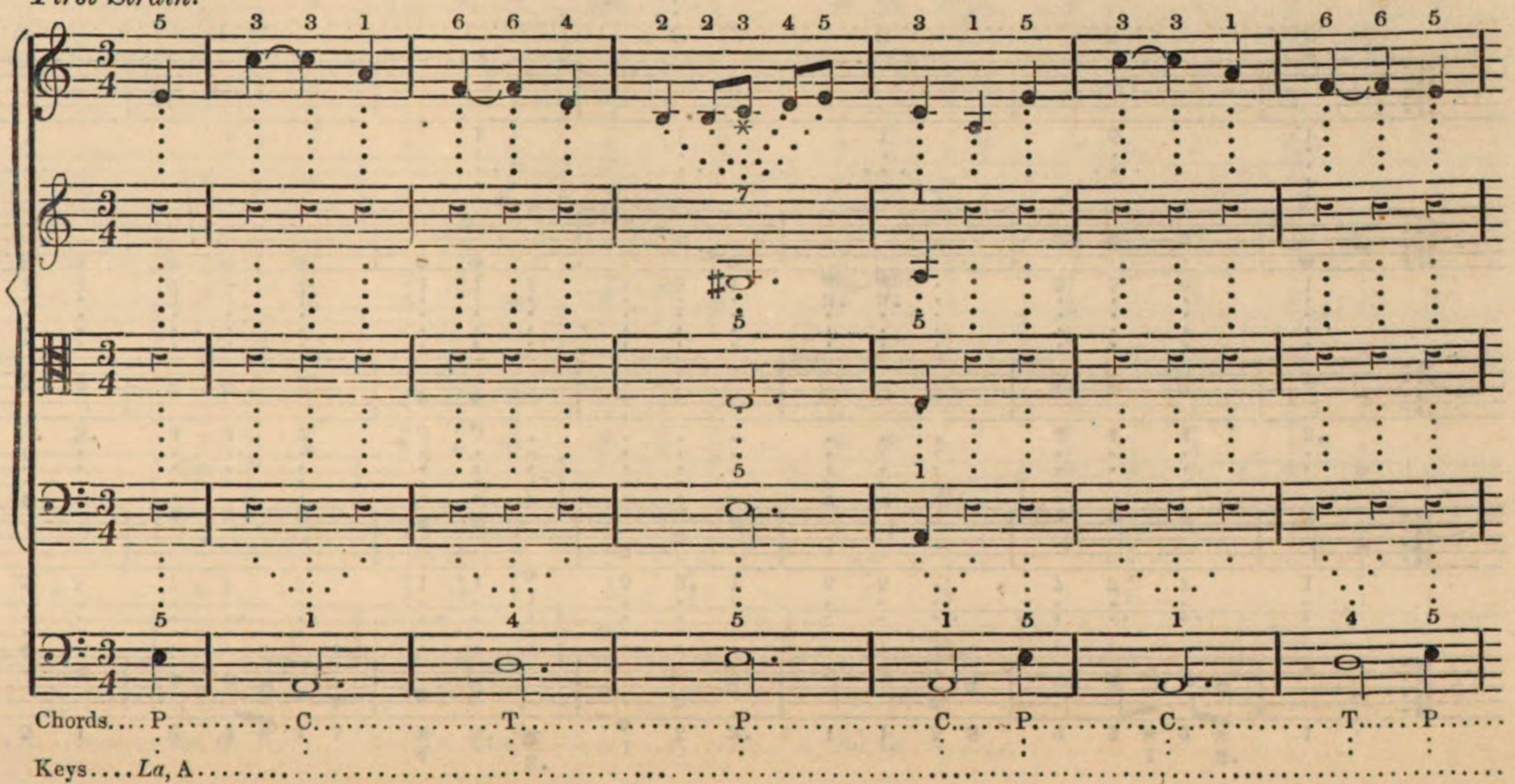



Tonic
Bass.
P C P C P C C P C C P C
La, A Sol, G La, A Sol, G

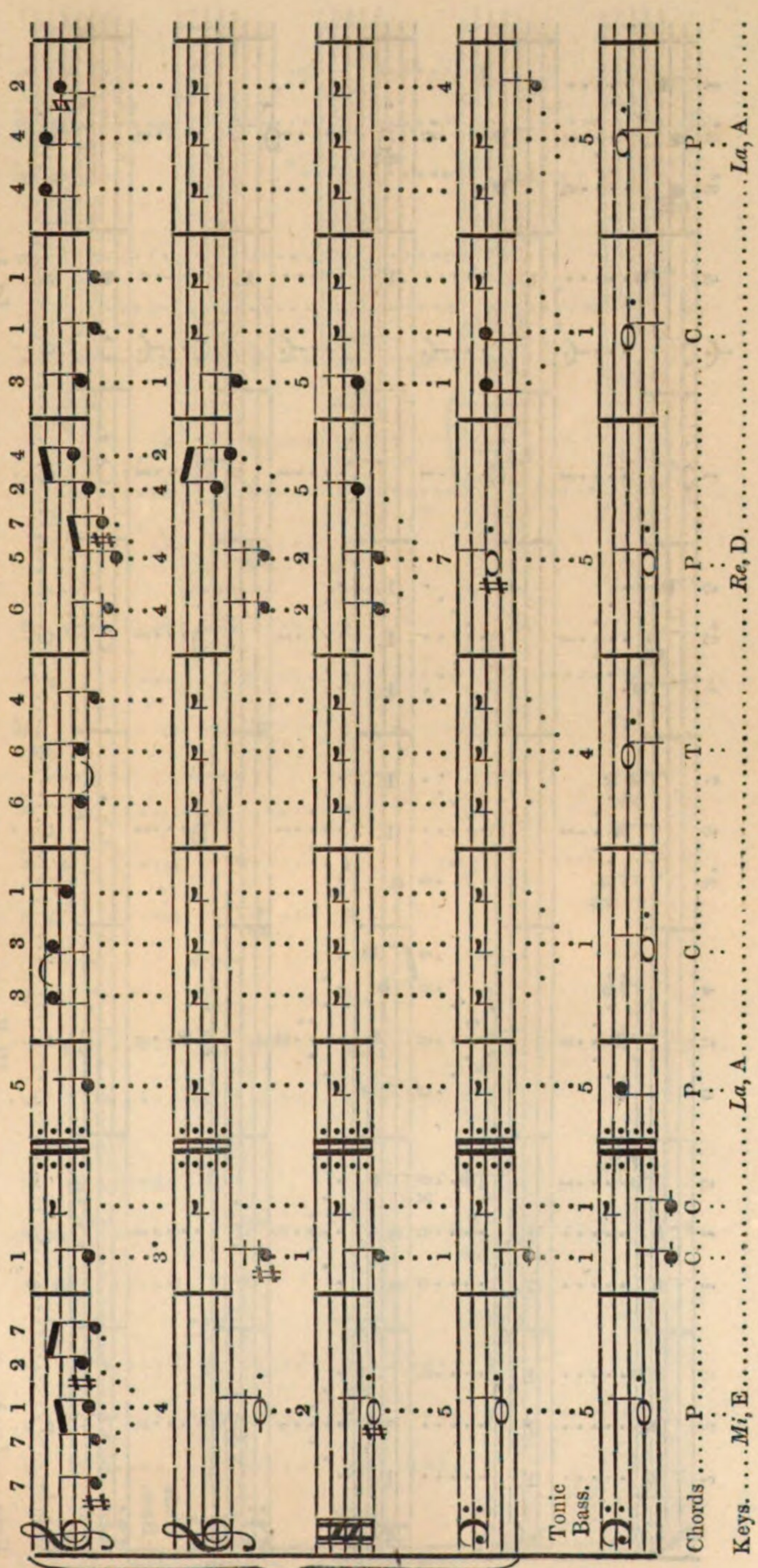

&c.
Chords....C.....P.....C.
Keys.....Sol, G.....G.....
Tonic
Bass.
U

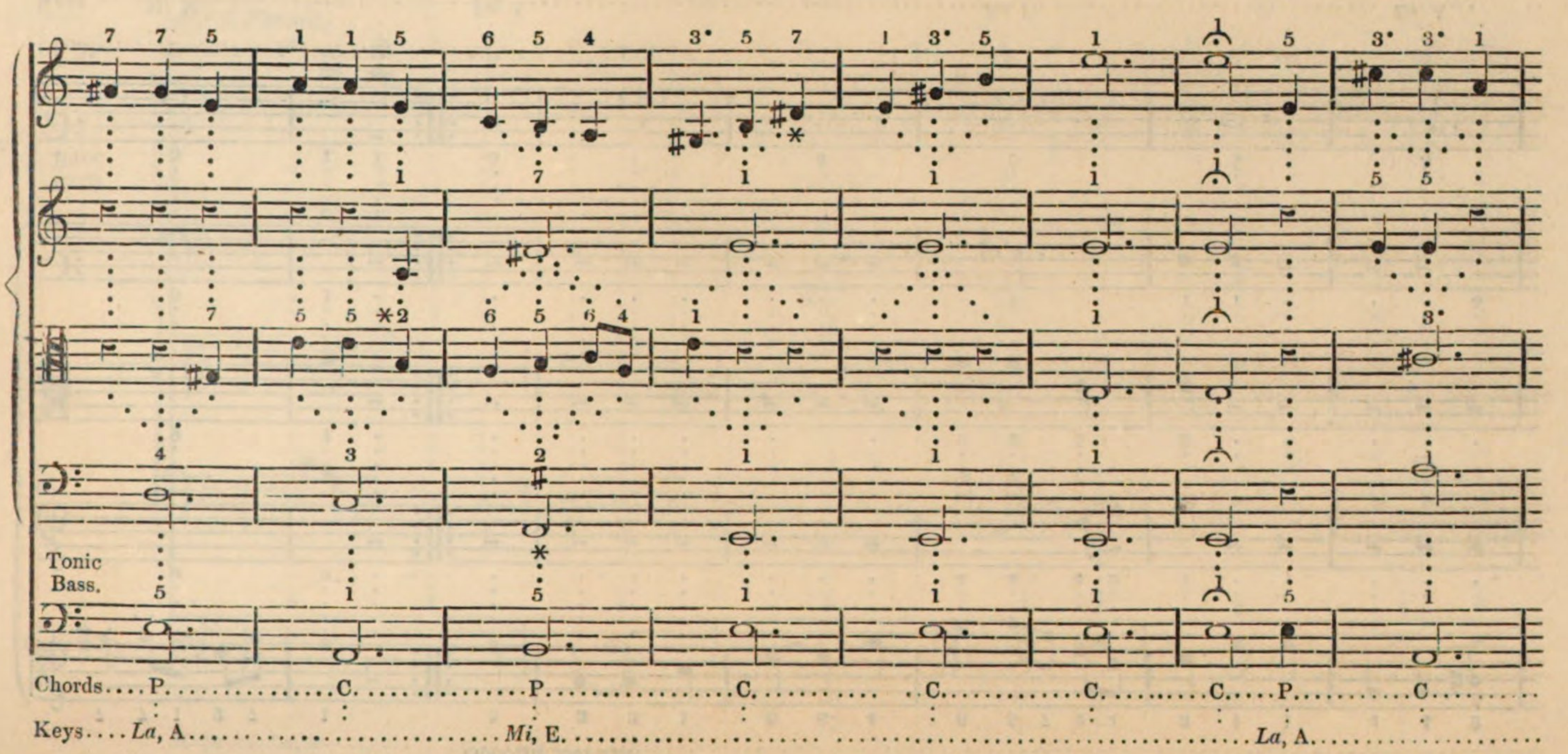
TRIO OF HAYDN.

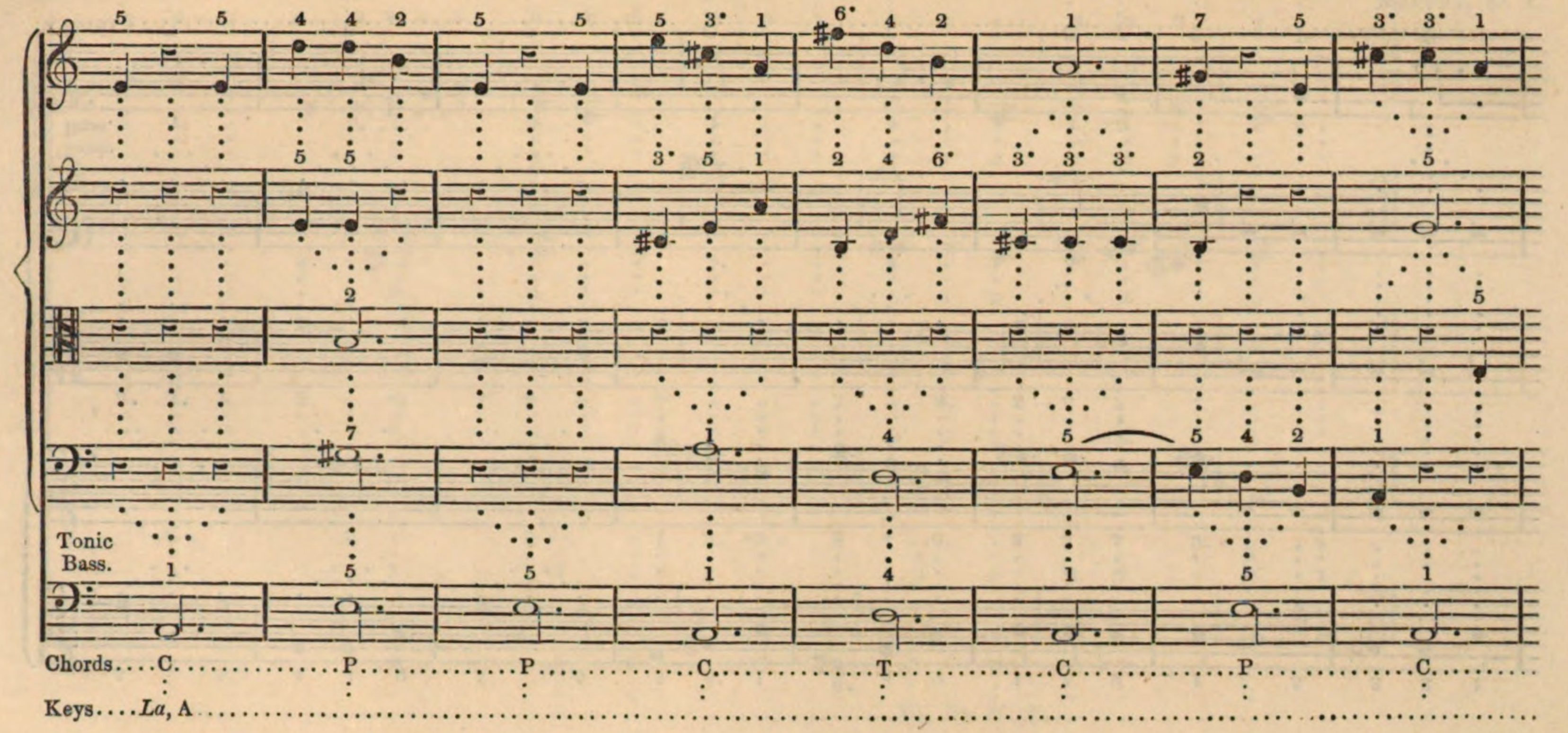
First Strain.

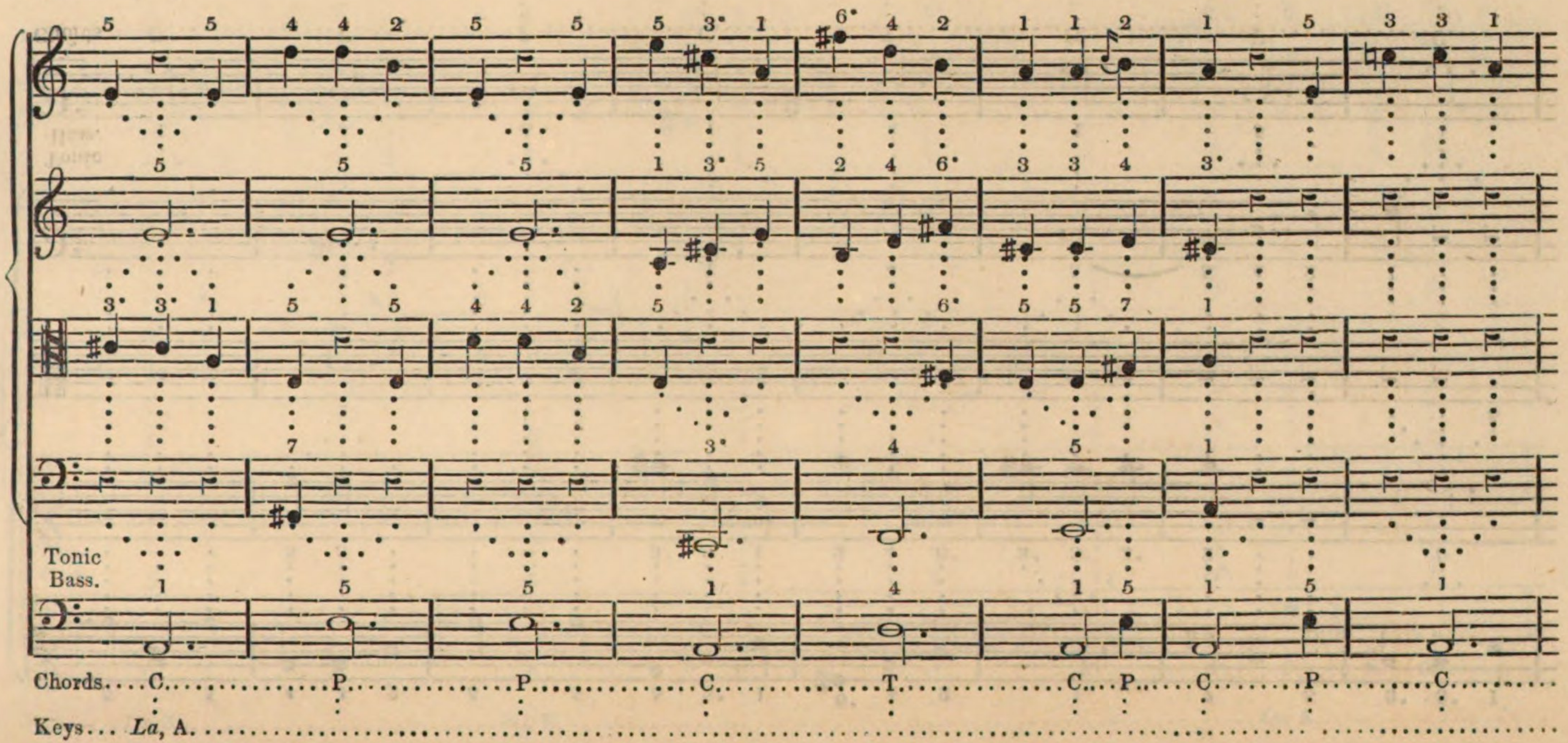


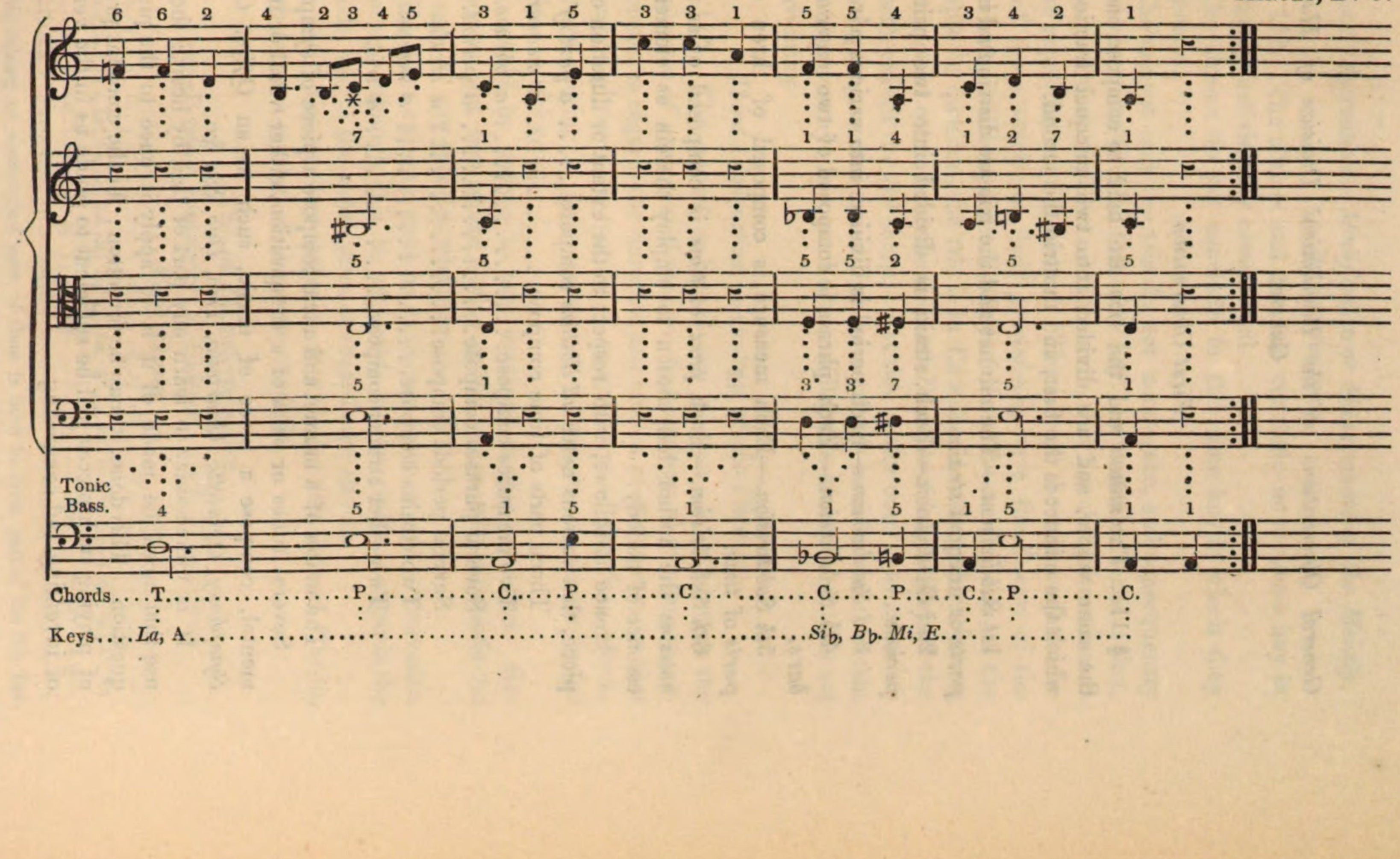
Second Strain.




Tonic
Bass.
Chords.... P. C. P. C. C. C. C. P. C.
Keys.... *La*, A. *Mi*, E. *La*, A.


Tonic
Bass.
Chords....C.....P.....P.....C.....T.....C.....P.....C.....
Keys....*La*, A.....


Tonic
Bass.
Chords....C.....P.....P.....C.....T.....C....P....C.....P.....C.....
Keys... *La*, A.


Tonic
Bass.
Chords....T.....P.....C.....P.....C.....C.....P.....C...P.....C.
Keys....*La*, A.....*Si*♭, *B*♭. *Mi*, *E*.....

General Observations on the Rhythmical Division of Haydn's Quartet.

First Observation.

§ 111. The *minuet* and the *trio* are held to compose one and the same whole, and are divided into two unequal fractions, of which the minuet is the first, and the trio the second.

1*st Subdivision.*—The minuet and the trio are distributed in two *parts* or unequal *strains.*

2*nd Subdivision.*—Each strain is divided into two principal *periods*..

3*rd Subdivision.*—Each period is divided into various *phrases.*

4*th Subdivision.*—Each phrase is composed of two *measures* or *bars.*

5*th Subdivision.*—Each measure is composed of three equal *parts* of *time.*

6*th Subdivision.*—Each *part* of *time* is composed of as many *notes* as the author has chosen to employ therein as elements or essence of melody.

Hence it follows, with respect to the extent or duration of the piece, that various notes *ad libitum* compose..... *a part of time.*

Three parts of time compose..... ..... *a measure.*
Two measures compose..... *a phrase.*
Several phrases compose..... *a period.*
Several periods compose..... .... *a strain.*
Two strains compose..... *a minuet.*
Two other strains compose..... *a trio.*

The union of a minuet and a trio compose a piece of symphony.

Several tunes or parts of a composition, either vocal or instrumental, compose a piece of music, such as an *Office, Opera, Symphony, Quintetto, Quartetto, Trio, Duo, &c. &c.*

It is unnecessary to learn any part of this by heart; the only use that need be made of it is to apply it once to the piece in question. This done, it may be forgotten; for the constant practice of playing such pieces will be sufficient to guide us in the very act of inventing and composing.

Second Observation.—Modification or Management of the Melody to its Sonorousness.

§ 112. The minuet and the trio conclude in the same key in which they individually commenced.

The strains do not conclude in the same key in which they commenced.

The minuet and the trio do not commence, and consequently do not conclude, both in the same key. It is on this account that, in the execution of pieces of this nature, they are always terminated by the repetition of the minuet. The key of the trio ought to be one of those which, in their *precadence*, have the fewest of the altered sounds belonging to the key of the minuet. So, also, in the example in question, the trio is in *La natural minor*, which has no altered sound common to the scale of *Do natural major* (key of the minuet), except the *Sol* sharp. Let the reader once more examine the preceding example, and then he need not be solicitous to retain it in his memory; his recollection will guide him when in the act of inventing.

Third Observation.—Analogy of the Phrases.

§ 113. The *period* embraces two *phrases:* it is between the two phrases of each period that we find analogy, that is to say, resemblance as regards the duration and motion of the notes; so that the second phrase is a species of counterform of the first, which, although varying in its sonorousness, undergoes no change in the *rhythm*, or *vice versâ*.

It would be useless to add anything to this indication. Recollection and that innate feeling called genius will supersede the necessity of any theories whatever.

The same example must be examined again, and the observation forgotten, although this is applicable to the *strain* as regards the periods, and to the *entire piece* as regards the strains.

§ 114. Let us now proceed to examine the Trio of Haydn, which forms a portion of the same example.

Trio in La natural minor.

Note.—P. means *Precadence;* C. *Cadence;* and T. *Transcadence.*

First Strain.

Chords..P..	..C..	..T..	..P..	..C.. .. ..P..	..C..	..T.. .. ..C..	..P..	.. C..
Keys La, A♮*	La, A♮	La, A♮	La, A♮	La, A♯..La, A	La, A♮	La, A♯..La, A♮	Mi, E♮	Mi, E♮
Bars..	..1st..	..2d..	..3d..	.....4th.. ..	..5th.	....6th.. ..	..7th.	..8th..

* This raising or unaccented part of time is held to form part of the 8th bar.

Let us follow the method of the author in the way he has conducted this charming melody.

1st. He proceeds on the three chords of the key of *La* minor in the first six bars.

2ndly. In the seventh bar, he gives the *precadence* of *Mi natural major*, to conclude on its *cadence* in the eighth bar.

3rdly. In the seventh bar, where he has chosen to effect a change of the key, he has necessarily presented such of the precadencial sounds of the key of *Mi* natural as are not common to the key of *La* natural minor, which he intended to disappear. These sounds are found to be *Re* sharp and *Fa* sharp.

4thly. The author has selected the cadence of *Mi* natural major, in order to give that rest to the melody; for the cadence of *Mi* natural major is the understood precadence of the key of *La* natural, into which it will re-enter upon recommencing the strain. A composer of the present day would have given, in the same place, this rest to the melody in another key, and he would have been applauded, and even admired. Nevertheless, without saying any thing on the subject of this applause, we shall have the satisfaction of demonstrating to the reader that he is himself capable of working this pretended prodigy. He has only to substitute, in the seventh bar, another precadence instead of that of *Mi* natural.

5thly. With respect to the shades of *energy* and *softness* in the melody, the author has managed them in the following manner.

Solo.		*For Four Parts*		*Solo.*		*For Four Parts.*	
1st Bar.	2nd Bar.	3rd Bar.	4th Bar.	5th Bar.	6th Bar.	7th Bar.	8th Bar.
1st. Phrase.		2nd Phrase.		3rd Phrase.		4th Phrase.	
1st Period.				2nd Period.			
First Strain.							

§ 115. Genius, that gift which Nature alone can bestow, clearly pervades this little tract. The solo presents itself in the first phrase with an expression mild, modest, and even timid. The second phrase, which is a genuine chorus, commends, encourages, and excites it to continue. In the third phrase, the *solo* repeats its proposition without raising itself by the approbation obtained, and, consequently, without adding the slightest grace to its discourse. Then (4th phrase) with more emotion than the first time, the chorus repeats its approbation, but in a manner far more energetic and with a considerable elevation of the voice (seven semitones), as if it were exclaiming: "Bravo! you are equal to any effort,

pursue your course, and rely upon us!" The reader may peruse, if he pleases, the articles *Genius*, *Unity of Melody*, and *PrimaIntenzione*, in the Dictionaries of Rousseau and Castilblaze.

The only rule that can be deduced from this examination, is that of sparing the harmonic effects by the melodic intercalations of *a solo*, *a due*, *a tre*, analogous to the expression of the phrase, and to the predominant and ruling sentiment of the piece. Nothing is more contrary to proper musical effect than the mania for harmonizing every thing: it proceeds from the want of a creative power; as children, who know not what to say, make a noise in order to attract attention.

With regard to the division of pieces into strains, we heartily wish that it were entirely discountenanced; we begin to indulge a hope that it will be shortly discarded. It appears to us to be a complete misconstruction; it is as if the first act of a play were twice represented from one end to another, or the exordium of a discourse twice delivered, before the other parts were gone on with.

It is proper, without doubt, to repeat the phrases in those places where they are necessary to strengthen the general idea; but it cannot be correct, at a moment when the audience is deeply interested, to say to them: "You are not at this point, I must repeat the same thing over again." As a general thesis, every thing that arrests the course of the imagination of an auditor is injurious to the object proposed in the arts. Whenever the public insist, in an opera, on the repetition of an air which has afforded them peculiar satisfaction, they become almost indifferent to the rest of the opera, and are no longer in a fit state to relish it.

The reader is doubtless sensible that we are abandoning our didactic gravity; and we do so because we have very little to say to him with respect to the *rules of the art*, and because we shall shortly come to the *art of judging the rules without having learned them in the ancient theories*. We recommend, however, to the reader the examination which he ought to make by himself, under the eyes of his master, of the second strain of the trio. The examination of the minuet will then be much easier, although the minuet is apparently more difficult, or, to speak the language of ignorance, more learned; for in Music, as in every thing else, we measure things according to the distance at which we are removed from them. The learned of our ancestors are not ours; ours will not be those of our children, and are not even those of thirty years ago, which have remained far in the back ground. Haydn astonished us, in the first instance, by the boldness, richness, and

depth of his combinations; we find him now *modest*, timid, and occasionally superficial in his ornaments: we cease to regard him as a deeply learned man; but his fame, as a great author, will be immortal.

And now our lesson is finished. Finished..... !!! the reader will probably say,—but is this all you know?—Absolutely all, Sir. Then, really, it is nothing very surprising.—That is true; but still it is all that is known by the greatest composers, and differs only in the manner in which we have explained it to you.—But, Sir, are not the great composers capable of composing *operas*, *offices*, *canons*, *fugues on various subjects*, *with twenty-four choruses*, and more than *five hundred voices*, and do they not compose the most surprising pieces, such as the *inversion of the stave*, *recurrents* (*cannerizzanti*), *enigmas*, by *diapente*, by *diatessaron*, by *double parts*, by *simple*, by *compound score*, &c. &c. &c.?—Excuse me, Sir; they know how to do every thing you have mentioned, exactly as you yourself do; setting aside those names, and as soon as the conditions, viz. the respective, the alternate, and the reciprocal weaving of those pieces, be stated to you. Oh, really, Sir, that is saying rather too much.—No; I assure you my assertion is strictly true: my surprise was no less than yours, the day on which I discovered my knowledge of the whole of this science; and I cannot, even now, resist my inclination to laugh in calling to mind the astonishment of Mr. Jourdain when he found that he could speak and write prose.

CHAPTER XXXIII.

OF THE FUGUE.

§ 116. We shall now proceed to make our readers acquainted with that immense musical colossus called a *Fugue*. It is considered as the most difficult and the most perfect achievement of the art, relatively to composition; and we wish the disciples of our theory to be no longer frightened by the fear usually caused by that phantom.

We have already had occasion of cursorily speaking of both Fugue and Canon; but without giving any rule for their composition. We now present them. The word *Fugue*, *Fuga*, is Italian, and means *flight*, *evasion*, or shift; because, in fact, the essential point of the mechanism and art of that composition consists of the apparent disappearance or abandonment made

by each voice from the society of a voice or part which pursues it, invades it, and takes possession of the same phrase which it has just pronounced, but which it takes care to transpose to a different key, to conceal, as it were, its robbery. That first phrase is called the *Theme*, *Subject*, or *Motive* of the fugue. As soon as the new voice or part takes possession of the theme or motive, which hence receives the name of *Reply*, the first voice or part forms a *counter-point*, which is called *counter-motive*. This explanation of the fugue clearly shows that it is nothing else but a *counterpoint* of those we already know how to compose. The inventor of that kind of composition is quite unknown; but, from the name he gave to it, it is to be inferred that he was an Italian. To whatever nation he might belong, he deserved the honor of immortality; for to the fugue, indeed, are due several valuable improvements of the art, and a fine ray of the glory of the greatest composers; since in it are included all the beauties, difficulties, and charms which can be produced by the combination of rhythm with *tonogammic* power, and the often affecting change of the modic character.

It appears rational that the first idea of the fugue should be suggested to the inventor by the simple consonance of the two voices; for he could not help observing, that, of two melodies consonant with each other, the one can be sung alone, before both be sung together. It is, consequently, very probable that the fugue owes its origin to the popular composition known by the name of *Canon*, in which the voices or parts begin successively, and sing at the same time the same chant, so as to harmonize together, but without changing the scale or key. This being the case, it is necessary, before the reader passes to the examples of the fugue, that he should examine a canon, which will, as it were, open and entirely level the way.

The Canon.

§ 117. It is evident that, in reality, every composition is a canon; since every one can be sung first as a *solo*, afterwards as a *duet*, then as a *terzet*, and at last as a *quartet*, provided the melody be extended to no more octaves than the length of a single voice can go through; since all the voices have to sing that single and same melody.

The reader will now observe that the *typometer* is a true *canon* for four voices, to which can be added the *typometric* bass as a fifth voice. Hence it results that singing the typometer between five voices or instruments, each of which comes successively in

turn in a given order, and is sung in its proper *register*, or in the octave belonging to it, will produce the type, the mould, and the model of all possible canons. Each voice will have to begin the canon anew as soon as it has ended it; the consequcnce of which will be, that the canon will have no end, but when all the voices agree to cease together, all taking care to rest at the same time upon the *cadence*, which is the only final chord.

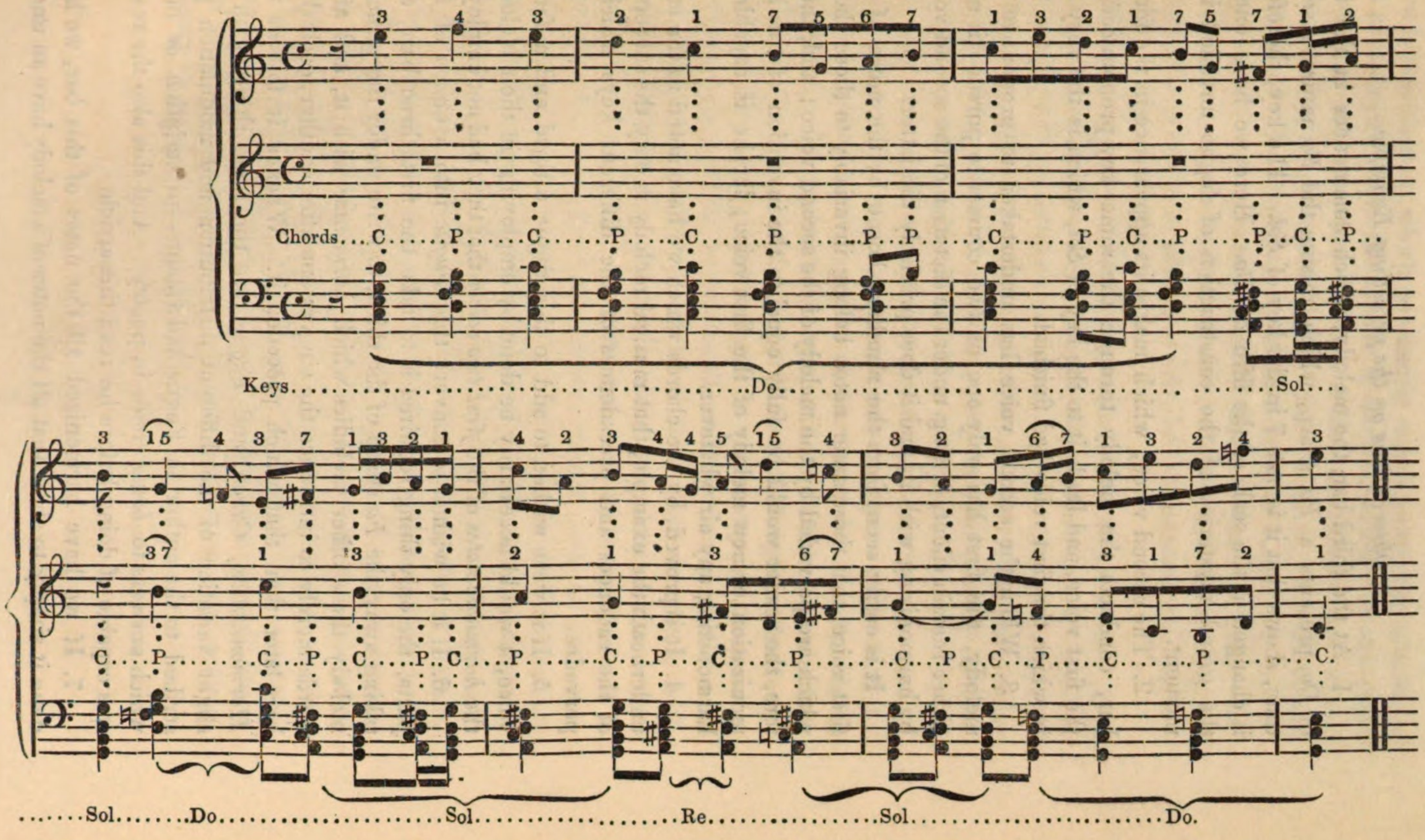
Let, therefore, the reader write the five voices of the *typometer* in two bars of $\frac{3}{4}$, flourish them gracefully, and give to the flourishing the suitable alternateness. He will put in the first bar the three typometric chords, and in the last the cadence, only taking care to let it be preceded by a syncope against the fifth voice, or typometric bass. He can, if he like, adapt words to this composition. They must be of an affectionate or tender kind, if they are to be sung *adagio;* but lively or playful, if *allegro*. In the latter case, he should diminish the flourish, and sing with that confidence which he will have derived from the certainty that he has composed a good harmony, and that it will sound well.

Some wit may say that the preceding paragraph savours of a recipe of the *Royal Cook;* but it is not our fault, if Nature knows how to dress only one dish. Art modifies it with its spices, either *just, false, diminished*, or *superfluous, simple* or *compound, &c. &c.;* and with all those condiments which have excited our intemperance, and corrupted our taste to such a degree, that it is not satisfied with the simple nectar which used to delight our sober ancestors without ever intoxicating them, but prefers to it brandy mixed with gun-powder. But let us pass over this digression, while the new fashion is passing away.

We shall give to the reader the *meloharmonic Typometer* as a canon for five voices, without any flourish, to compel him to compose it himself with flourishing; and we shall refer him to the examples which he will find at § 7th, in Chap. V, of the following Treatise. Farther on, in the chapter entitled *Great Models*, he will see three old canons for two voices, by Richter, which will afford a sufficient model for composing some more modern ones; i. e. appearing (without being really so) to be worked with more science and more art. These three compositions are of the ancient style called *rigorous*. The reader will cypher them if he chooses, after having put each bar below the anterior one, in order to see the chords and the motions of the melodies, which being done, he will be able to appreciate them according to his judgment. This we shall not venture to outstrip.

§ 118. Let us return to the fugue. The reader will do well, if he wishes to obtain a fundamental idea of its structure, to begin by examining the ensuing fugue in two parts, composed by Morigi, and the analysis which follows it.

Fugue on Two Subjects between Two Parts, by Angel Morigi.



Observations on the preceding Example.

1. At the third bar, the melody, which commences in the key of *Do*, presents a *Fa* sharp, which, raising the *Fa* natural a semi-tone, shows that it is *note* 7 in the key of *Sol*. The key, therefore, is changed at the scale of the fifth of *Do*. Here we have one of the grand mysteries of the construction of fugue unveiled in a moment.

2. The second voice, which makes its appearance in the fourth bar, conducts the melody through the same key pronounced by the first voice, and leads it to the key of *Sol*, which is the very one in which the first voice had finished.

3. When the second voice has undertaken to pronounce the melody, the first has only one of two courses to pursue: it must either remain silent, or sing under the dictation of the second voice, by harmonizing with it, and it does precisely the latter.

It is easily seen, from the numbers borne by the notes of the first voice, that these same notes belong invariably to those chords which are pervaded by the melody of the second voice; and, therefore, the reader would be fully equal to the invention of this harmonization or new melody of the first voice; for he is capable of harmonizing any air whatever.

4. It is proved, by the chords which we have noted in the stave underneath the example, that musical melody is only the succession of the cadences and precadences of the different keys which it pervades.

5. If it were wished to add to this fugue a third and a fourth voice, it would necessarily be done by employing in their melodies the *harmonic notes* of the *first two voices* that they had not employed.

6. If it be wished to convert this *Fugue* into a *Canon* of four parts, the only thing required is to take the first three bars, and, taking away the *Fa* sharp of the third, to write under the principal melody three other melodies which *harmonize* with it, and afterwards merely to introduce the singers one after another, each three bars later than that which preceded it. Whence it follows that *Harmonization*, *Canon*, and *Fugue*, are the same thing, with the slight variation of the different distribution and modulation prescribed to the author in Fugue and Canon—prescription or order which answers to *bouts rimés* in poetry. And this also the reader was capable of doing before he read this article.

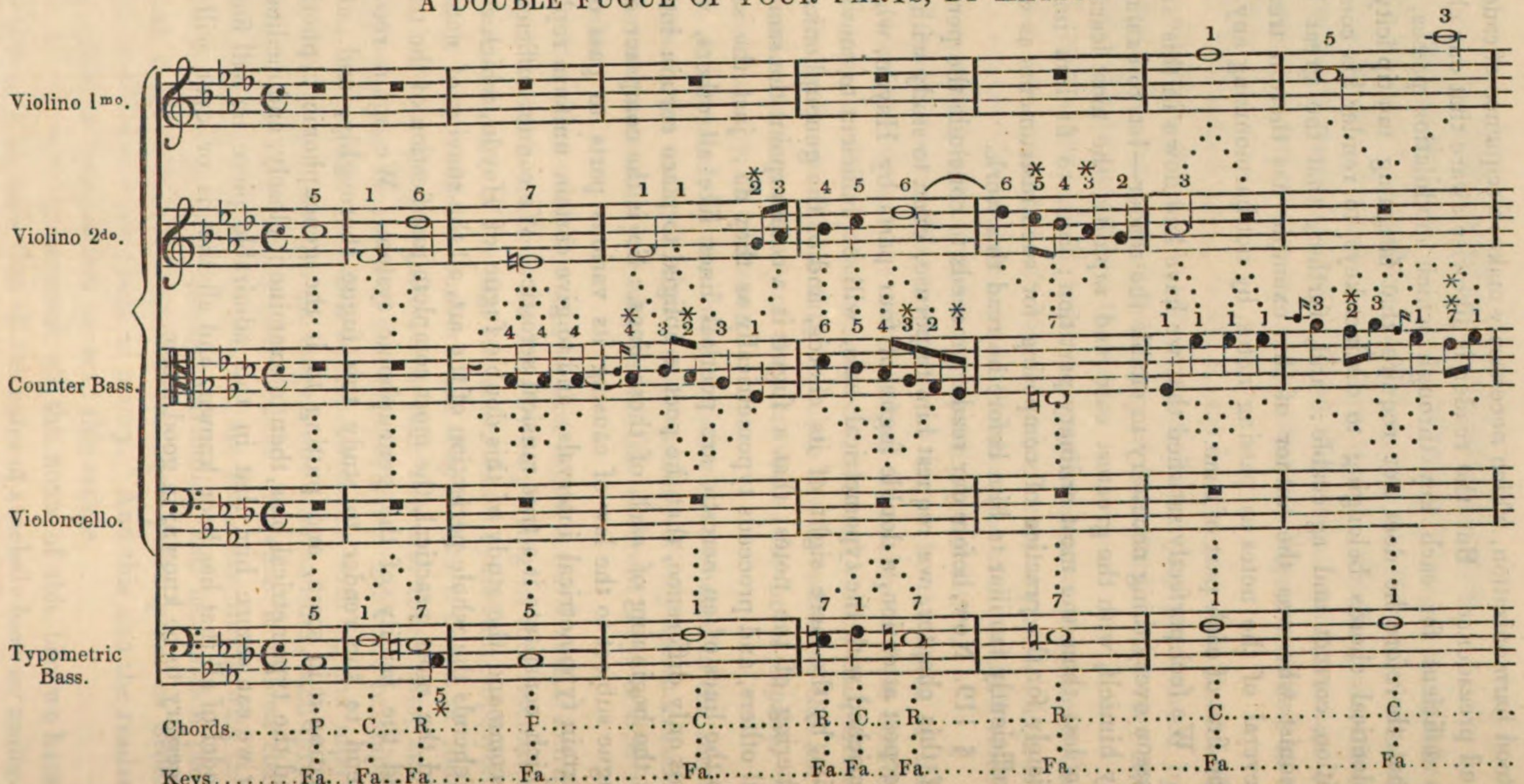
7. If we have harmonized all the notes of this bar, we have done it simply to show that all the notes of a melody have an under-

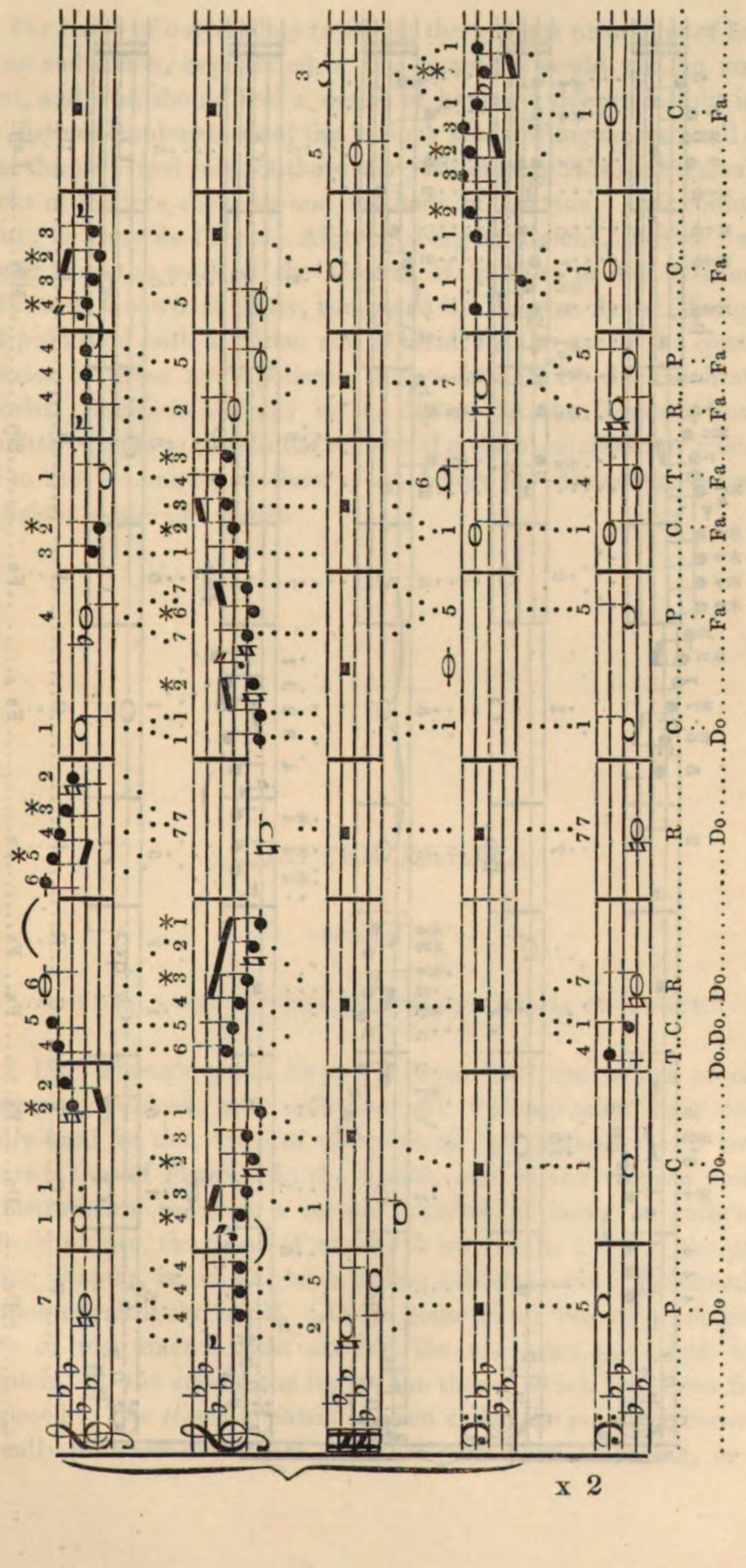
stood harmonization, which necessarily makes a sequence of cadence and precadence. But the reader is likewise aware that one chord is sufficient for each key through which modulation passes, and that therefore he does not require that fatiguing multiplicity of identical chords belonging to distinct keys, to render his composition correct and agreeable; and, further, that the great harmonist who was the author of this example has therein treated several of the notes as passing notes, by not harmonizing any but the first of each part of time.

We feel perfectly satisfied that we have laid down in this short lesson every thing necessary to enable the reader—1st. to examine, by himself, with the greatest ease and rapidity, the most learned, no less than the most ordinary partition; 2nd. to fit him immediately for the practice of composing for such instruments as were sufficiently familiar to him before he read this work.

§ 119. Now, before our reader proceeds to conclude the perusal of this chapter, we request him to peruse, even to study with the deepest attention, a double fugue of four parts by Haydn, which, enriched with the typometrical bass, will be sufficient to convince him, by the mere sight of its chords, and of the geneuphonic cyphering of the notes, that a fugue is a counterpoint the same as all others, and proceeds typometrically as they do; just the same as the lines of an acrostic are poetical lines like all others, with this only difference, that the poet is obliged to place certain letters at the beginning of each of those lines. So is the composer of a fugue subject to the law of causing its various parts to pass over certain typometrical intervals, and to give certain uniform replies, which constitute it a true musical acrostic. We cannot sufficiently recommend the study of this double fugue of Haydn, which comprehends the whole perfection of the art, all the suavity of nature, and the most practical, the most complete justification of the truth and the facility of the geneuphonic system. We again recommend to the reader to study this fugue thoroughly, and, after writing it in score, and putting to it the geneuphonic cyphering and the typometrical bass, then to examine it closely, and meditate; for we can assure him that in this admirable piece he will find a model of all that has been known, and all that is or ever will be necessary to be known, in good music.

A DOUBLE FUGUE OF FOUR PARTS, BY HAYDN.




C.....
Fa.....
C.....T.....R.....P.....C.....
Fa.....Fa.....Fa.....Fa.....Fa.....
R.....C.....P.....
Do.....Do.....Fa.....
C.....T.C...R.....
Do.....Do.Do.Do.....
P.....
Do.....
x 2

P . . . . . C . . . . . P . . . . . C . . . R . . . . . P . . . . . C . . . . . P . . . . . P . . . . . P . . . . . P .

Do . . . . . Do . . . . . Fa . . . . . Fa . . . Fa . . . . . Fa . . . . . Fa . . . . . Fa . . . . . Sib . . . . . Mib . . . . . Lab .

For those of our readers to whom the general principles of both fugue and canon, expounded in this chapter, would not be sufficient, and who should feel a desire of having a deeper insight into the distinct combinations of the various kinds of fugue, we shall extract the principal rules of those compositions from the most valuable works of modern theorists and methods of harmony and counterpoint; as Emy de l'Ilette, Albrechtsberger, Reicha, Weber; and chiefly from the work of the learned Malpurgh; as well as from a work well known in Italy, composed by Maestro Angel Moriggi, and published both at Milan and Madrid, for the use of the conservatories of those metropolises; in the former, by the celebrated theorist, Bonifacio Asioli; in the latter, by the General Count Moretti, equally versed in the science of musical composition according to the Geneuphonic theory, as, before its discovery, he was proficient in the old system.

CHAPTER XXXIV.

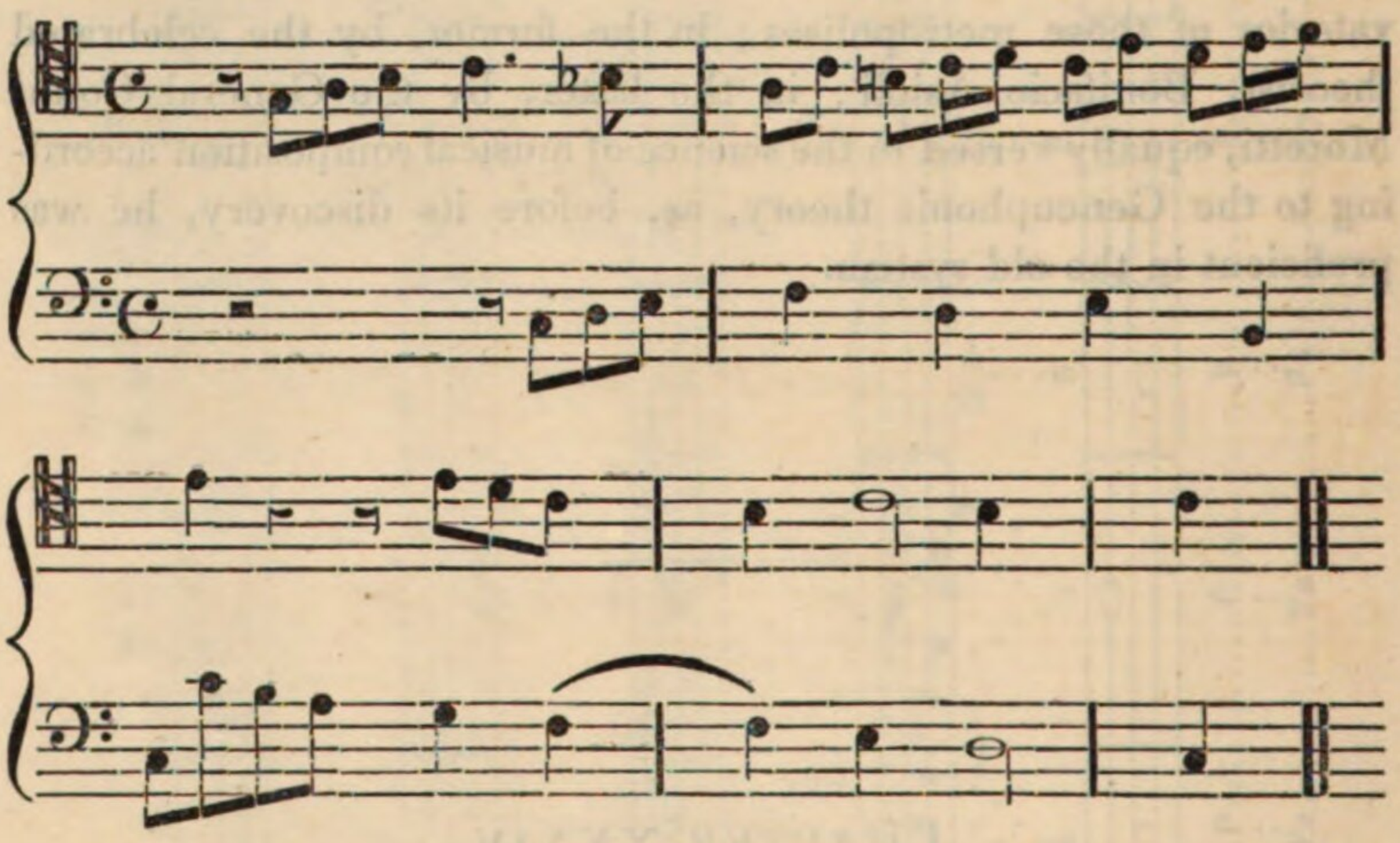
SECTION I.

GENERAL RULES OF THE DIFFERENT KINDS OF FUGUE.

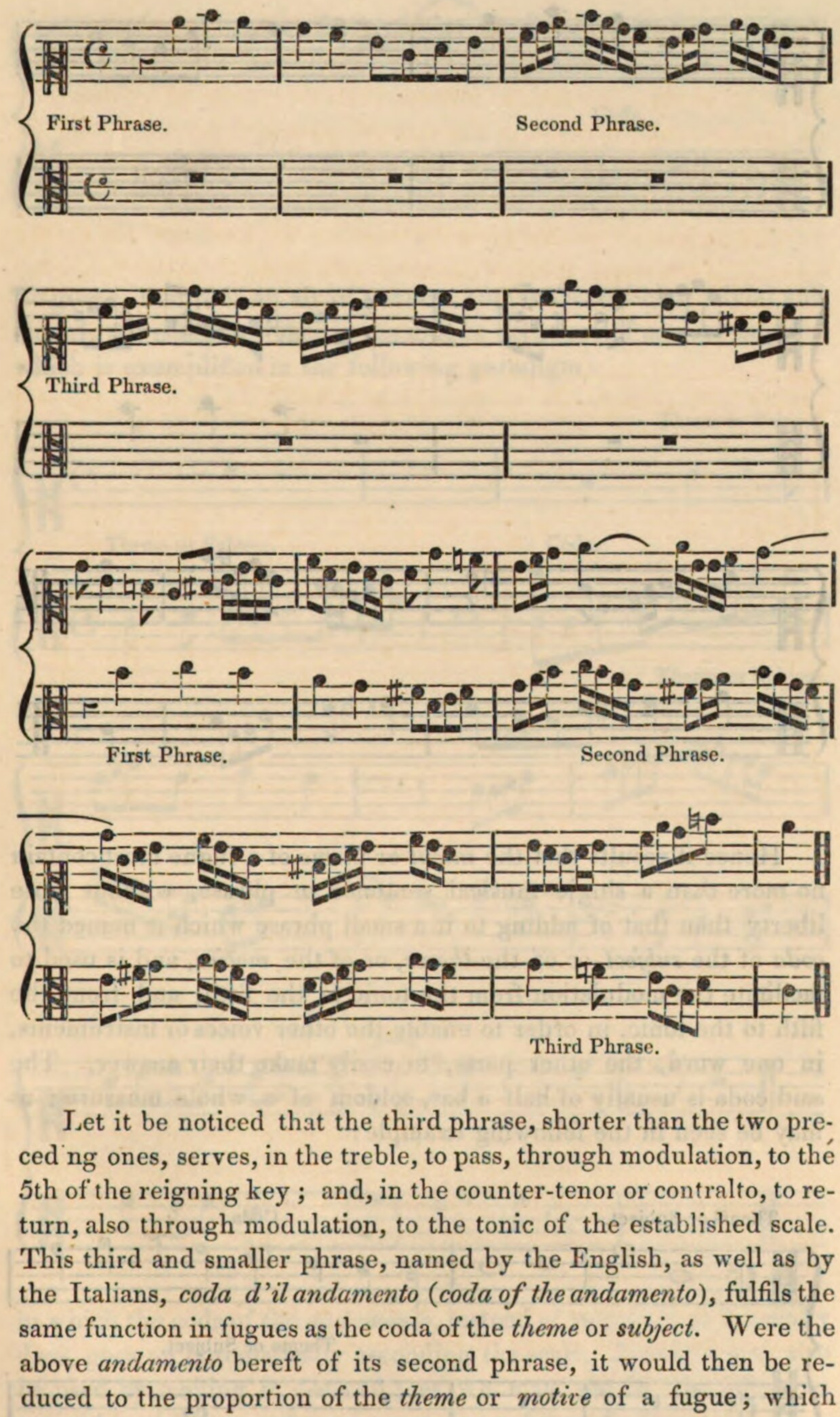
§ 120. Though to the Fugue were ascribed the names of *consequence*, *repetition*, and *imitation*, the denomination most commonly used for that kind of composition by professors and composers is that of *Fugue*. In the *Fugue*, one of the singing voices or instruments proposes a certain number of notes, or rather a melodic phrase, the name of which, as we saw in § 116 of the preceding chapter, is, in England, *theme*, *subject*, *motive*; the Spanish composers call it the *intent*. At its conclusion, the other singing parts or instruments must answer, the one after the other, and maintain, till the end of the fugue, the theme which has been first proposed. The *theme* or *intent* is often called the *proposal*, because it really proposes that which the other parts have to repeat, or to

which they must answer. It is also named the *antecedent*, or the *guide;* because it serves as a ruler or guide to those which it behoves to reply. Hence it follows that the name of *consequent*, *answer*, or *reply*, is given to the musical phrase or phrases sung or performed by the second or the other voices or instruments, when they successively imitate the *theme* or *subject*, or reply to it.

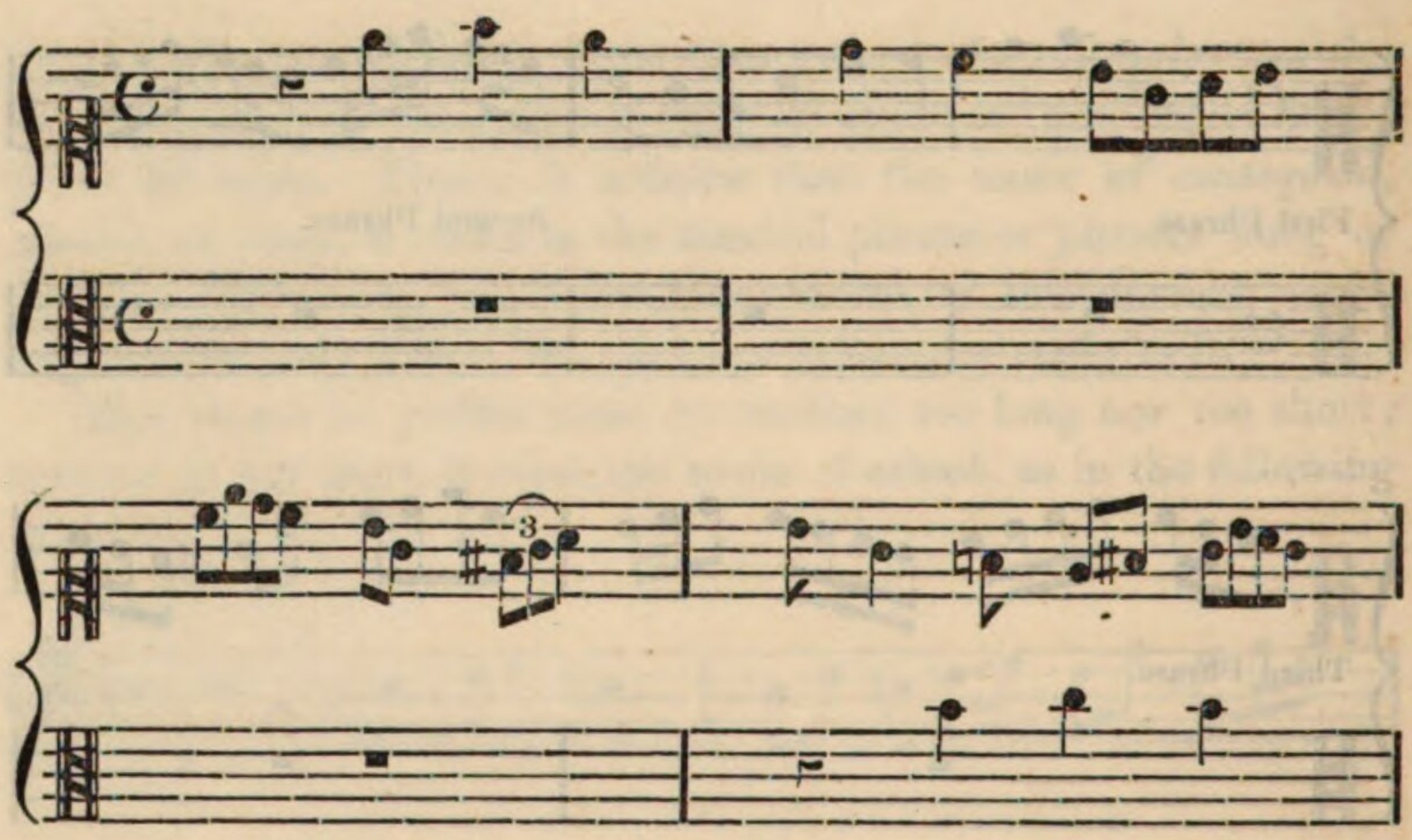
The *theme* or *motive* must be neither too long nor too short; because, if too short, it takes the name of *attack*, as in the following example:



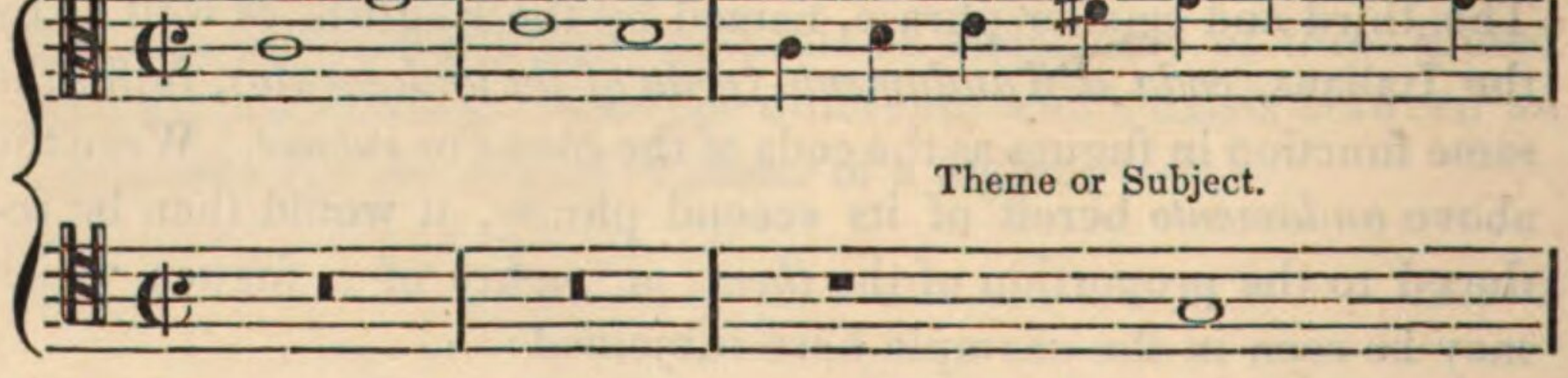
In this case, the *attack* cannot be used as the *theme* or *subject* of a *fugue;* because it is too short to be submitted to all the rules prescribed for *motives* or *intents* of *fugues:* the attack is, on the contrary, so freely employed, that it is permitted to the parts which have to answer, to do so at any degree of gravity or acuteness which best suits the composer's fancy; as may be seen in the above-quoted example. Were the theme or motive too long, it ought to be called *andamento*. The *andamento* sings on the strings of the key on which it is grounded, which must be the key governing the fugue, or one of the scales relative to it. *Andamentos* seldom consist of a single phrase; they frequently contain two or three united together. The example which follows presents an andamento of three united phrases, and clearly shows the difference which exists between an *andamento* and the *subject* or *theme* of a fugue.

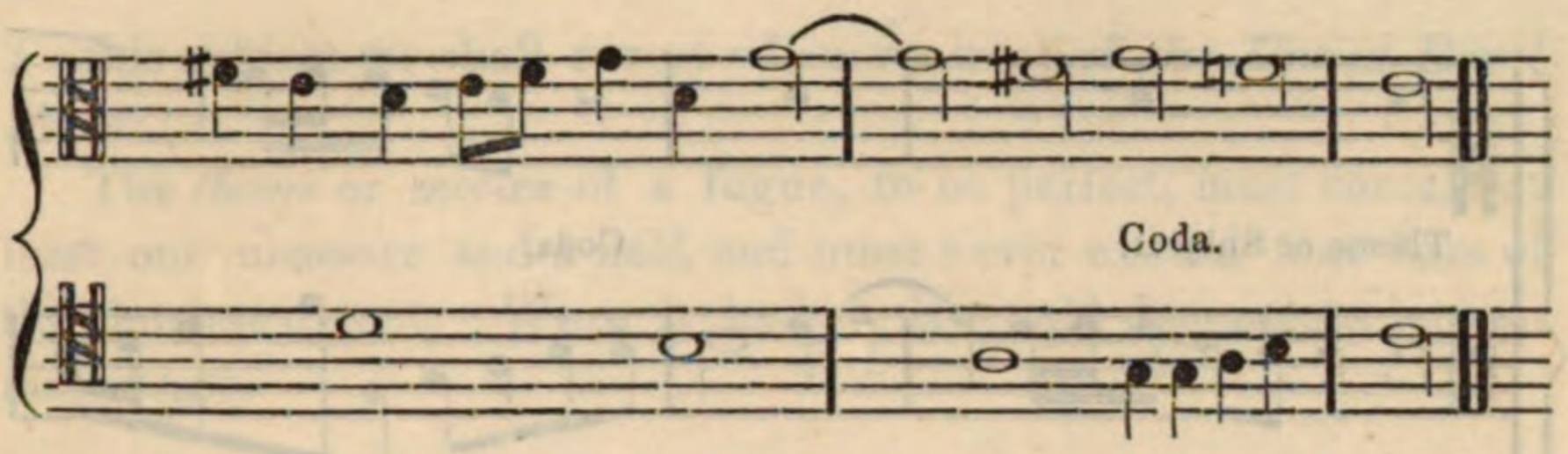


Let it be noticed that the third phrase, shorter than the two preced ng ones, serves, in the treble, to pass, through modulation, to the 5th of the reigning key ; and, in the counter-tenor or contralto, to return, also through modulation, to the tonic of the established scale. This third and smaller phrase, named by the English, as well as by the Italians, *coda d'il andamento* (*coda of the andamento*), fulfils the same function in fugues as the coda of the *theme* or *subject*. Were the above *andamento* bereft of its second phrase, it would then be reduced to the proportion of the *theme* or *motive* of a fugue; which may be seen in the example here subjoined:

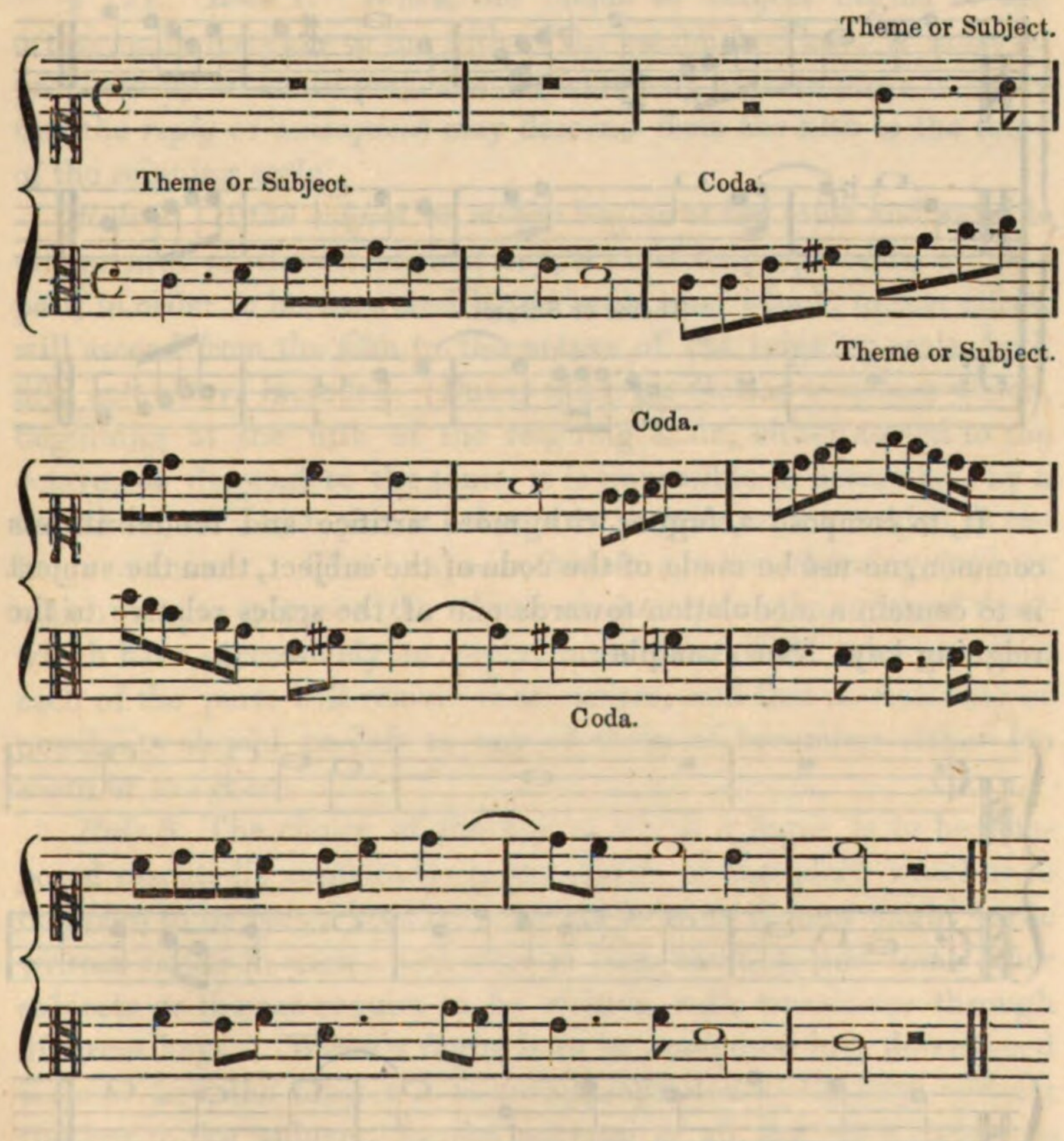


Hence it results that the *intent* or *theme* of a fugue must contain no more than a single musical sentence or phrase, without more liberty than that of adding to it a small phrase which is named the *coda* of the *subject*, or of the *theme*, or of the *motive*, and is used to facilitate the modulation from the tonic to the fifth, and from the fifth to the tonic, in order to enable the other voices or instruments, in one word, the other parts, to easily make their answer. The said coda is usually of half a bar, seldom of a whole measure; as may be seen in the following example:

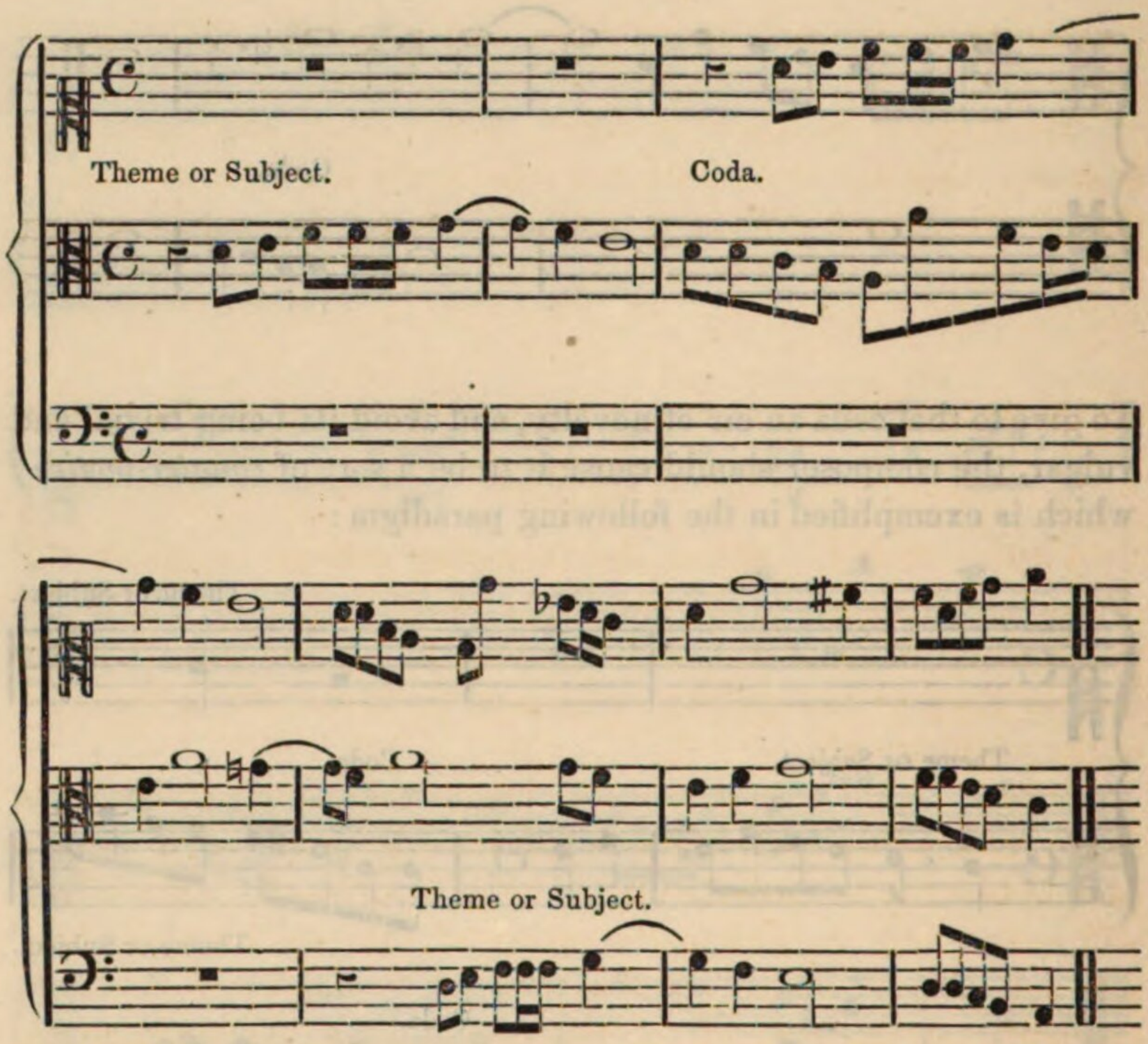




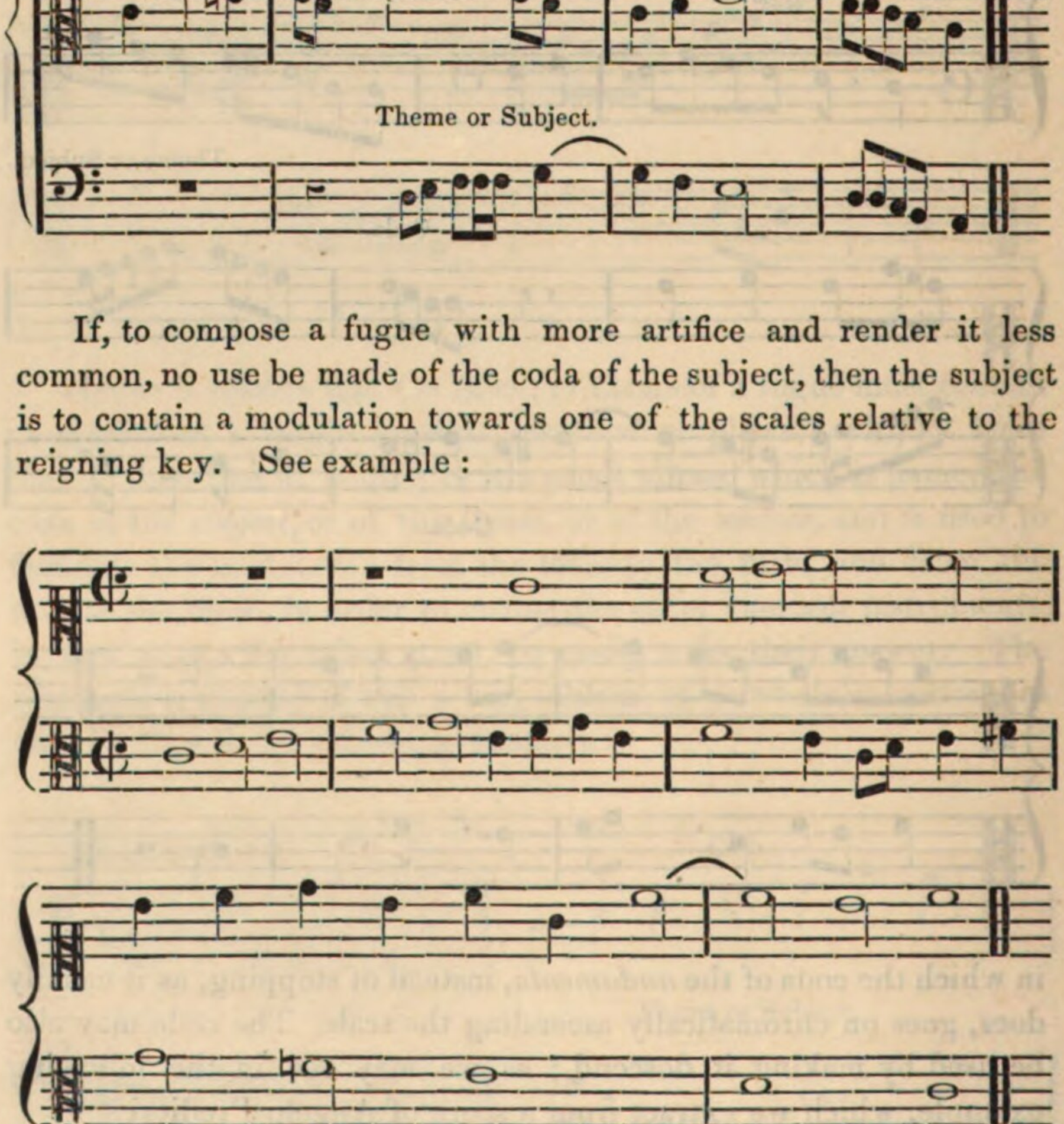
To give to that coda an air of novelty, and avoid its being trivial and vulgar, the composer should cause it to be a sort of *counter-motive*; which is exemplified in the following paradigm:



in which the coda of the *andamento*, instead of stopping, as it usually does, goes on chromatically ascending the scale. The coda may also be used by making it descend; as we may see in the following example, which we extract from a score of Angelo Predieri:



If, to compose a fugue with more artifice and render it less common, no use be made of the coda of the subject, then the subject is to contain a modulation towards one of the scales relative to the reigning key. See example :



To this subject we shall revert when we treat of the *Untied Royal Fugue.*

The *theme* or *motive* of a fugue, to be perfect, must contain at least one measure and a half, and must never exceed four bars of the shortest extent. Were it longer, it would degenerate into an *andamento.*

Of the Part which has to propose the Subject, and of the Part which has to make the Answer.

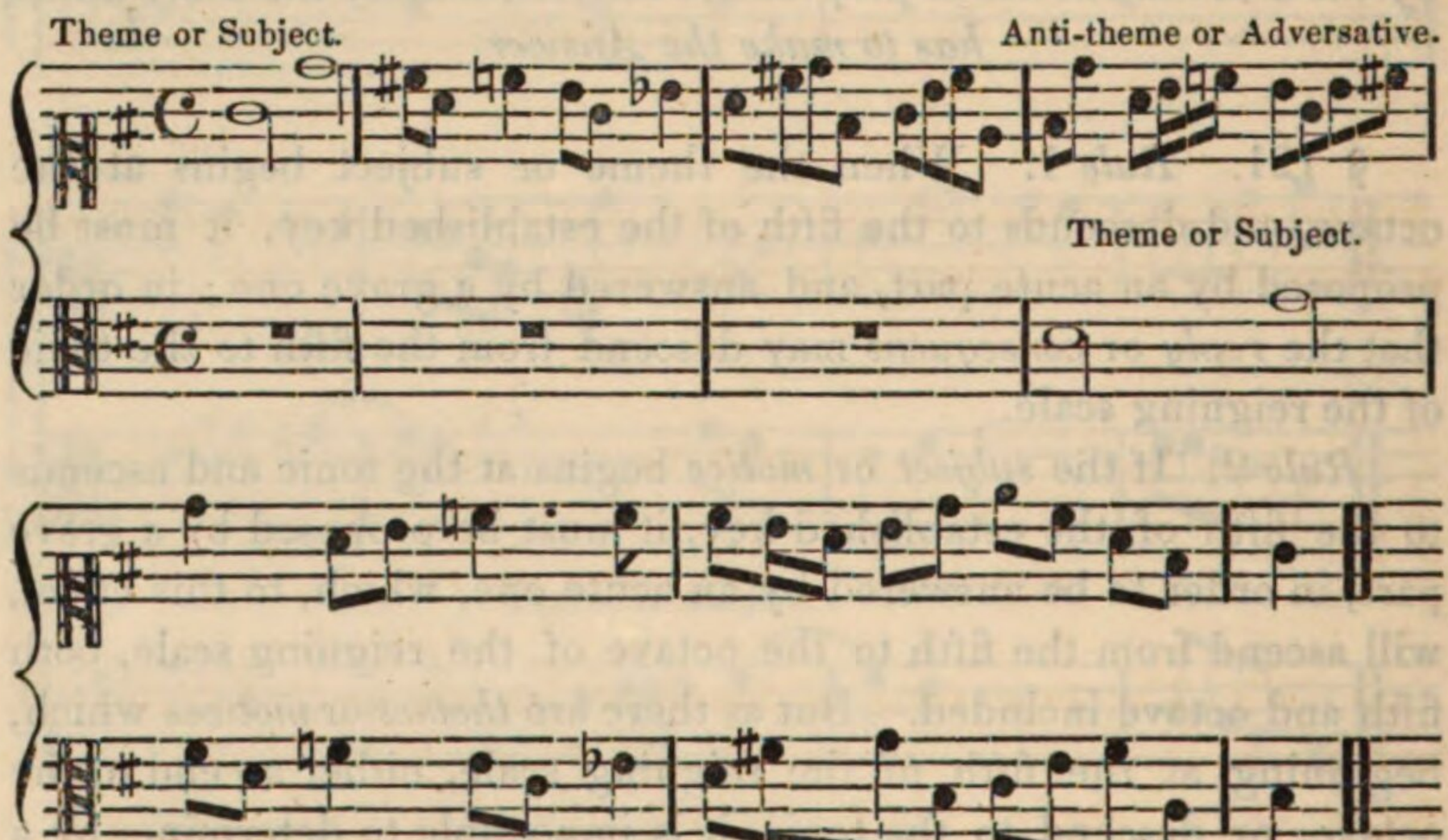
§ 121. *Rule* 1. When the theme or subject begins at the octave, and descends to the fifth of the established key, it must be proposed by an acute part, and answered by a grave one; in order that the *reply* or *consequent* may descend from the fifth to the tonic of the reigning scale.

Rule 2. If the *subject* or *motive* begins at the tonic and ascends to the fifth of the established key, it must be proposed by a grave part, in order to be answered by an acute one, which, to this effect, will ascend from the fifth to the octave of the reigning scale, both fifth and octave included. But as there are *themes* or *motives* which, beginning at the fifth of the reigning scale, either ascend to the octave, or descend to the tonic, it is impossible to determine, by a fixed rule, to which part it belongs to propose, and to which it belongs to answer. The composer therefore, when choosing the part which has to propose the *theme* or *intent,* and the order of those which have successively to reply, must first of all take care that each of the parts will remain in its centre, and that no necessity or possibility should be left to any of them of becoming either too acute or too grave.

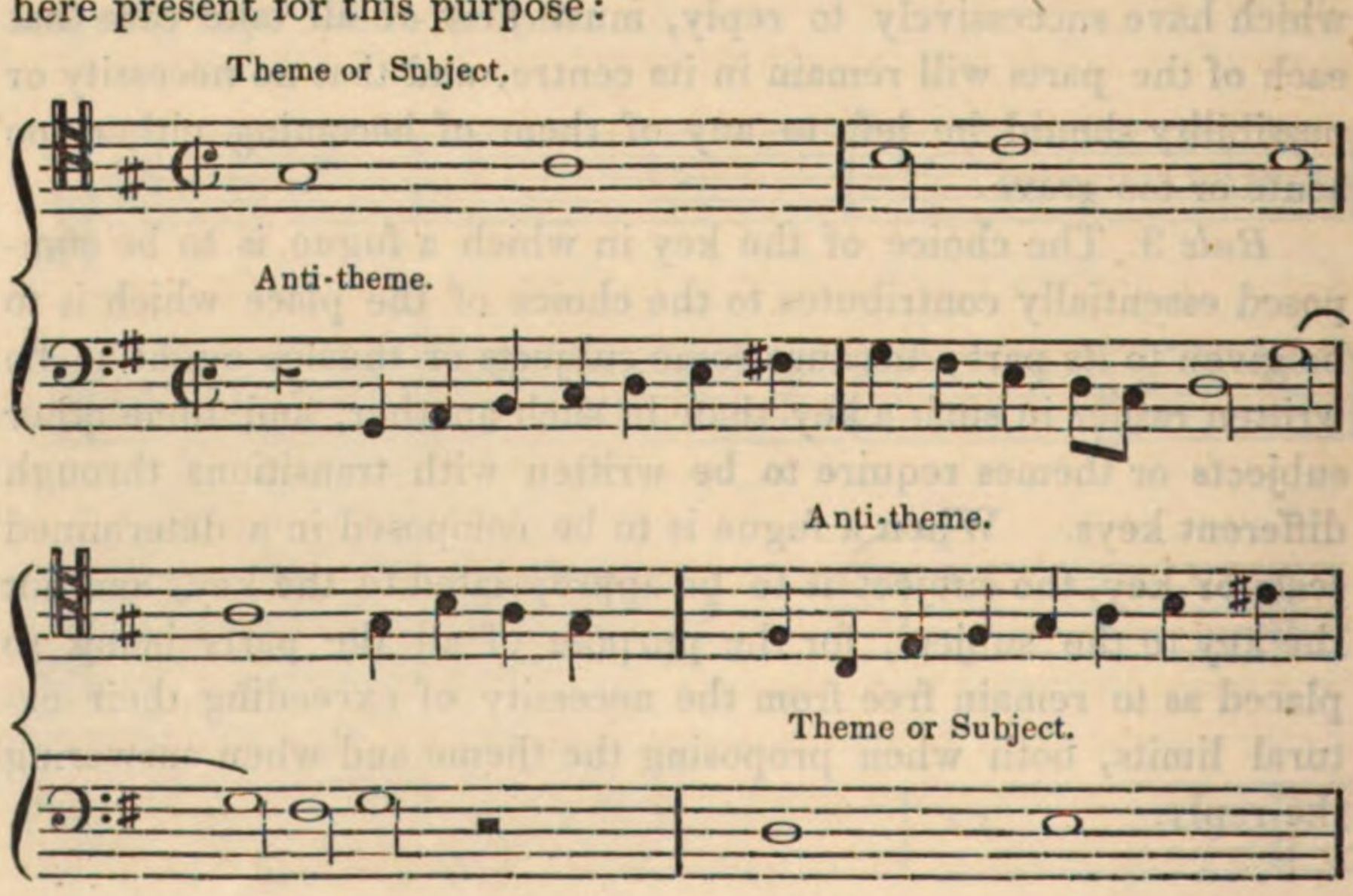
Rule 3. The choice of the key in which a fugue is to be composed essentially contributes to the choice of the place which is to be given to its part; because some subjects or themes ought to be written rather in such a key than in such another, and some other subjects or themes require to be written with transitions through different keys. When a fugue is to be composed in a determined scale or key, the subject is to be appropriated to the key, and not the key to the subject, for the purpose of all the parts being so placed as to remain free from the necessity of exceeding their natural limits, both when proposing the theme and when answering the reply.

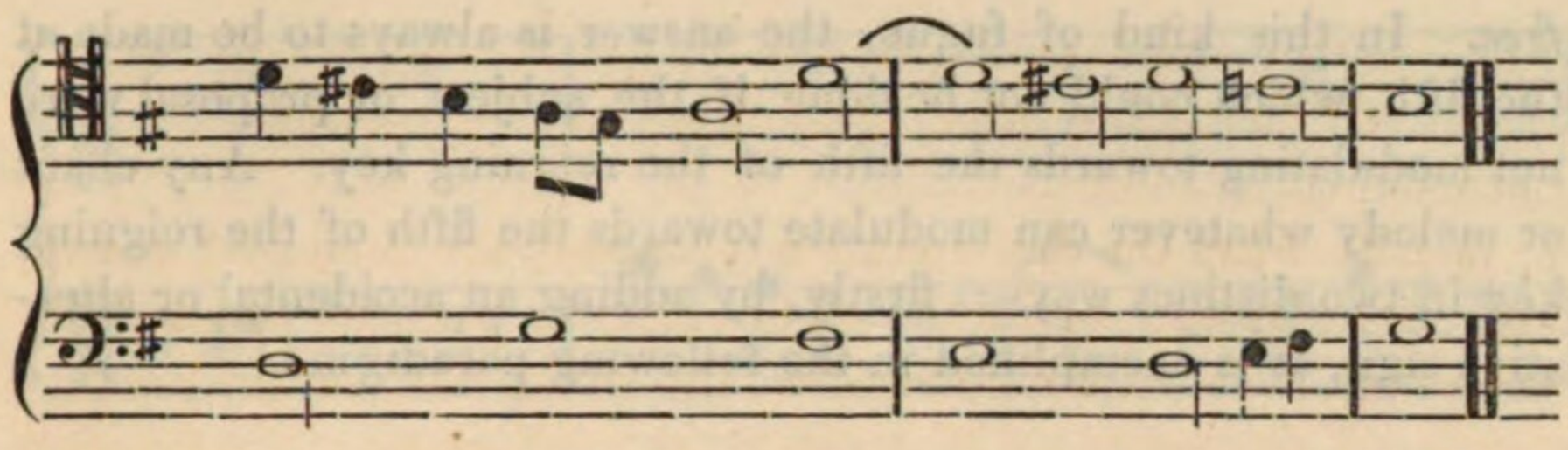
Of the Adversative, Anti-theme, or Counter-motive.

§ 122. After the first voice has proposed the *theme* or *motive*, that which it sings whilst the other voices or parts are successively answering is called the *adversative*, the *anti-theme*, or the *counter-motive*. This example will facilitate the intelligence of the function which is fulfilled by the *adversative :*



It may also be made to sing at the same time that the first voice is proposing the theme, as is demonstrated in the example which we here present for this purpose:





The composer will take care to write all his *adversatives* or *counter-motives* according to the rules of the counterpoint double at the octave, which he has perused in Chapter XXIV, page 216, of the present treatise; because they afford him great facility in the interchange or alternation of parts, whilst they exhibit a greater skill in weaving the contexture of a good fugue.

SECTION II.

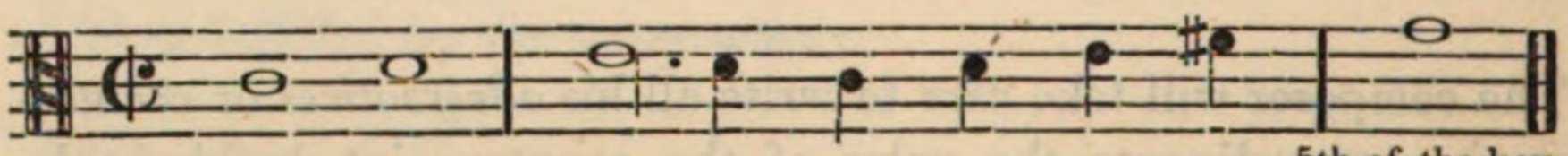
OF THE DIFFERENT KINDS OF FUGUE.

§ 123. The four sorts of fugue which are partially different from each other, are—first, the *Royal Fugue, tied;* secondly, the *Royal Fugue, untied or free;* thirdly, the *Fugue within the Key;* fourthly, the *Fugue by Imitation.* The royal fugue, tied, is that in which the answer or reply is equal to the theme or proposal in quantity, in quality, and in name: i. e. when it contains the same number of notes, and these are of the same nature, and keep between themselves respectively the same intervals as they do in the subject. When this parity, instead of being confined merely to the *theme* and *answer*, extends to the other passages; viz. to the accessory or intermingled bars of the fugue, from the beginning to the end; the fugue is then thought to be still more correct, or classical to a more masterly degree.

The reply or answer, when equal, as before explained, to the proposal or theme, is generally called *royal reply*. The royal fugue, tied, is also called *Canon*, which Greek word means Rule. The explanations which we have given in the foregoing chapter about that kind of musical composition, does not seem to us to require to be enlarged with more particulars.

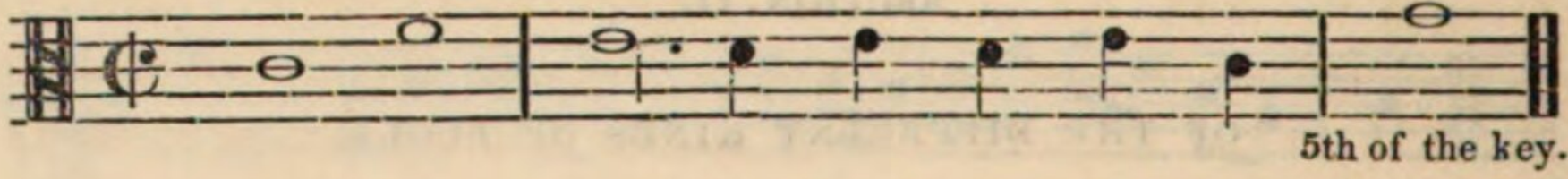
When the parity just alluded to, instead of being extended to the whole fugue, takes place only between the theme or proposal and its royal reply, then the fugue is called *Royal Fugue, untied or*

free. In this kind of fugue, the answer is always to be made at the fifth, which could not be done if the subject or proposal were not modulating towards the fifth of the reigning key. Any chant or melody whatever can modulate towards the fifth of the reigning key in two distinct ways: firstly, by adding an accidental or alterative sign, as is exemplified in the following paradigm:



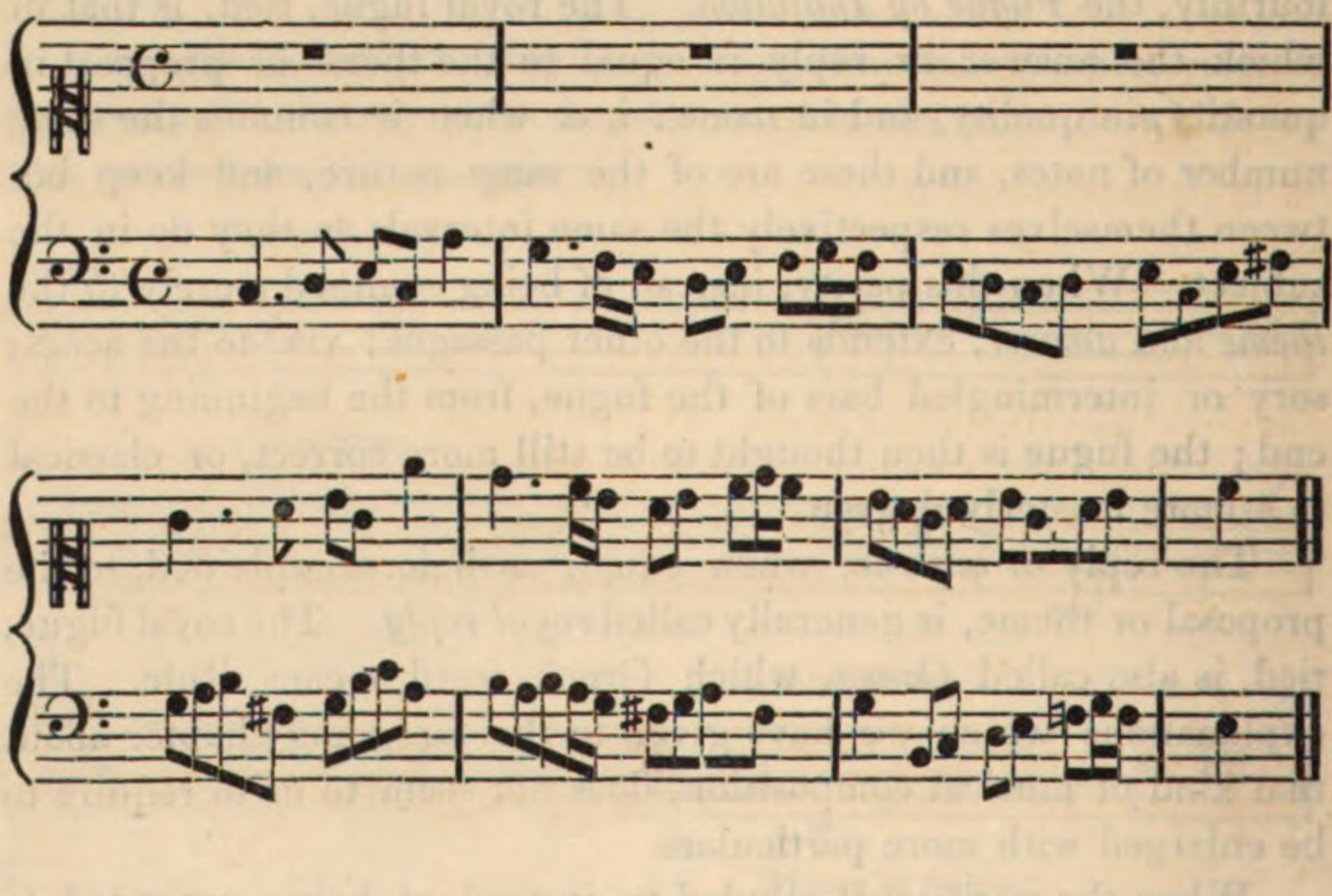
5th of the key.

secondly, by modulating, though not so completely, towards the fifth without the assistance of any alterative sign, as is exemplified in this example:

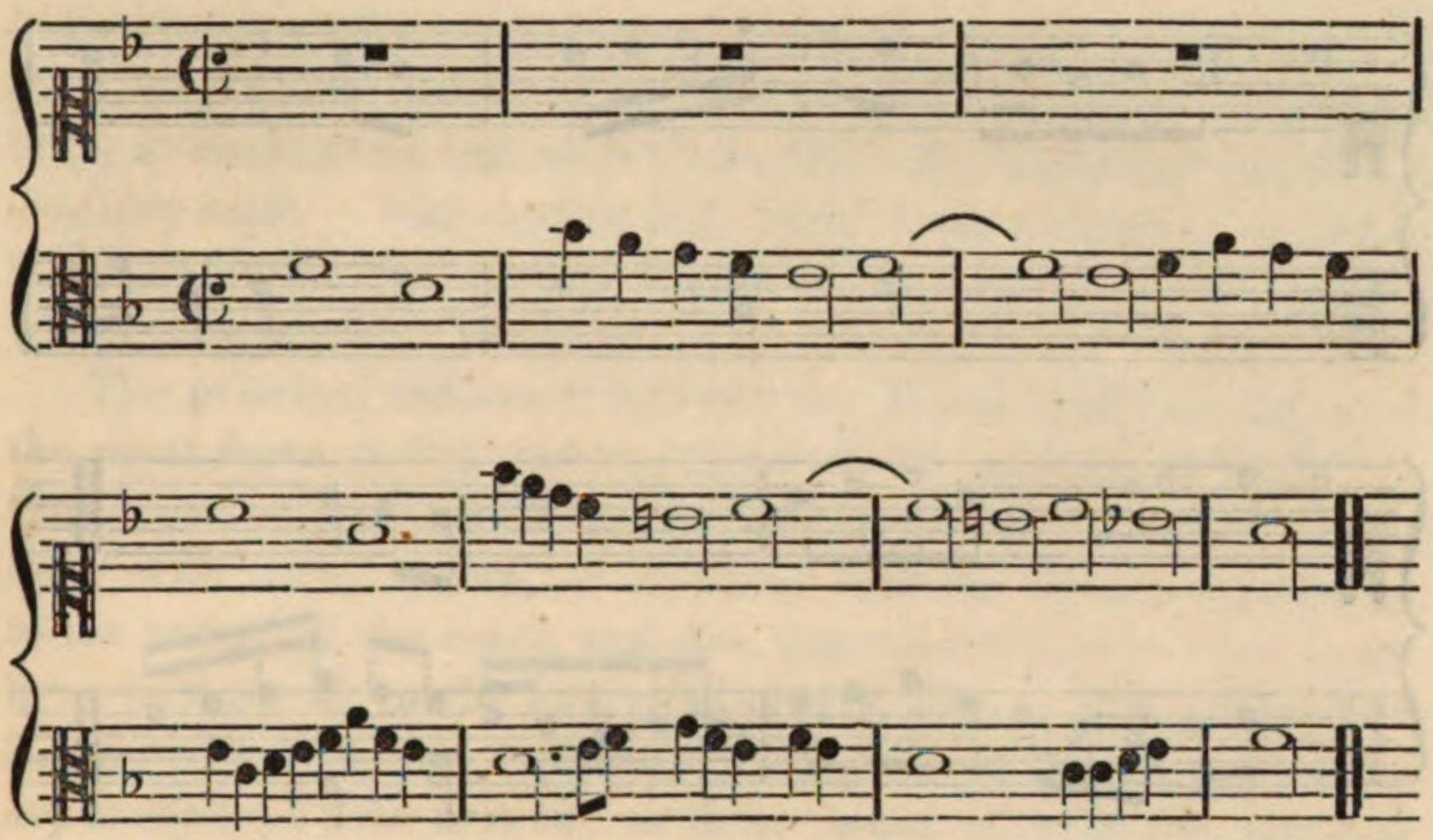


5th of the key.

Our reader will find, in the following example,

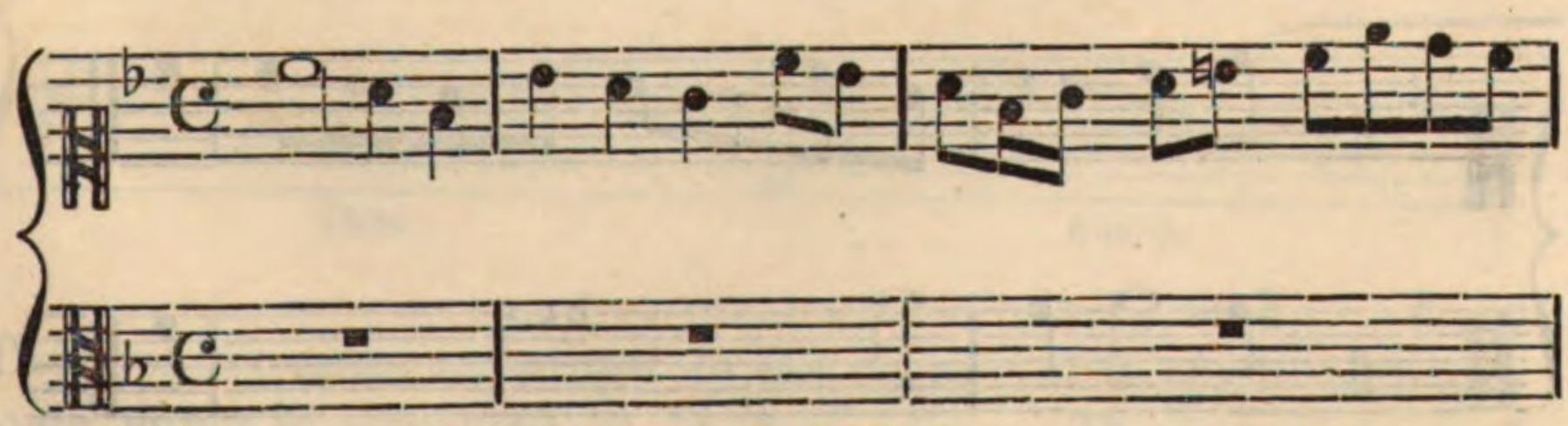


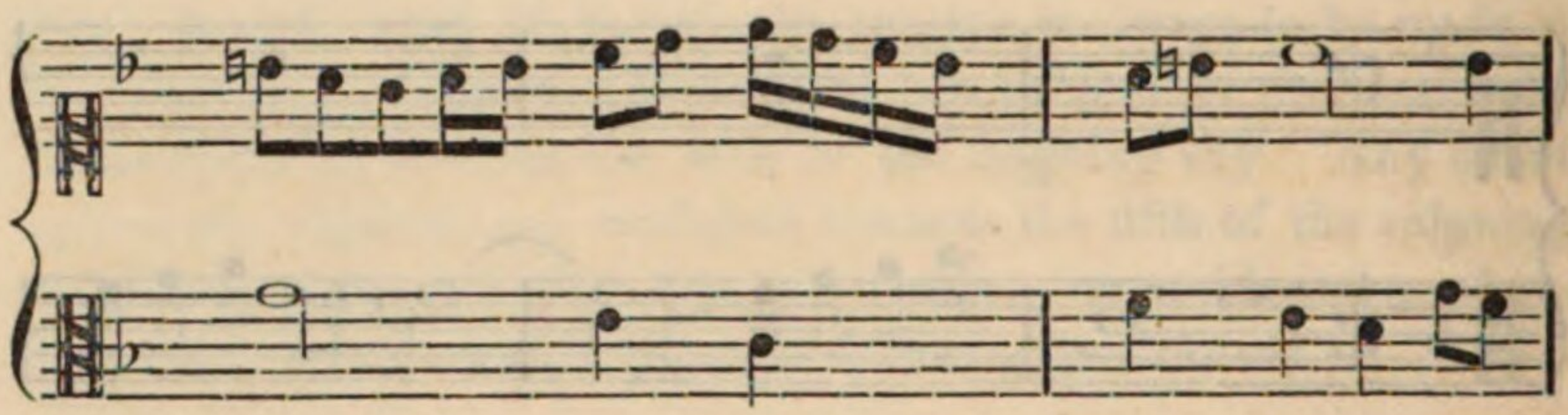
a royal reply to a theme which modulates towards the fifth of the reigning key by means of an alterative sign; and, in this example,

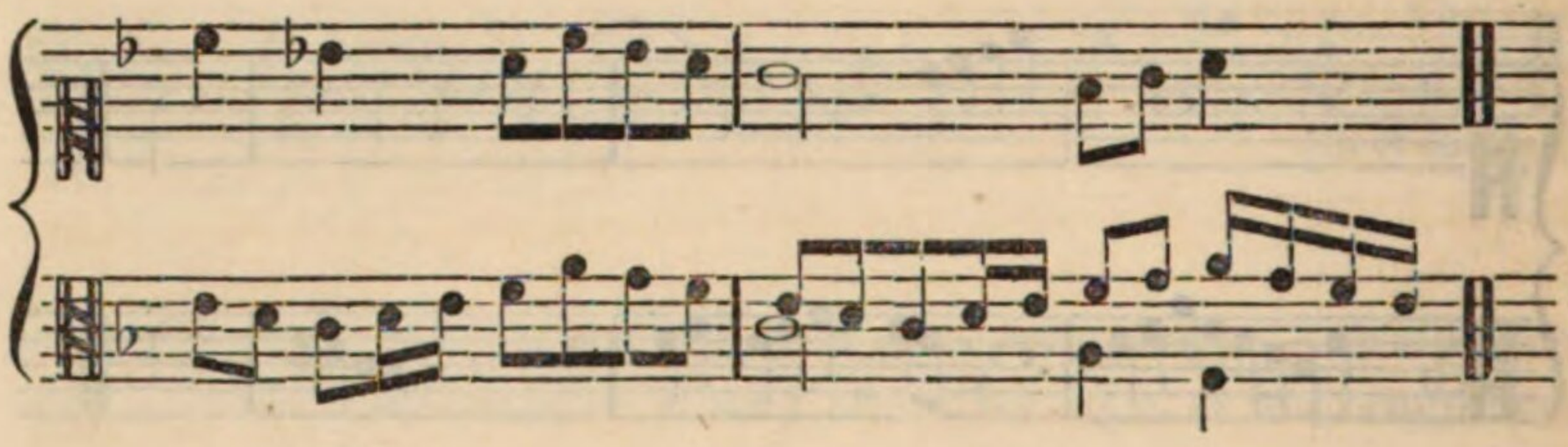


the same royal reply to the same proposal or theme, modulating also towards the fifth, but without the help of any accident. Both examples belong to the Royal Fugue; because the replies made at the fifth of the reigning key are similar to the proposal or theme with respect to the intervals between the notes, to the nature or figure of the said notes, and to their number.

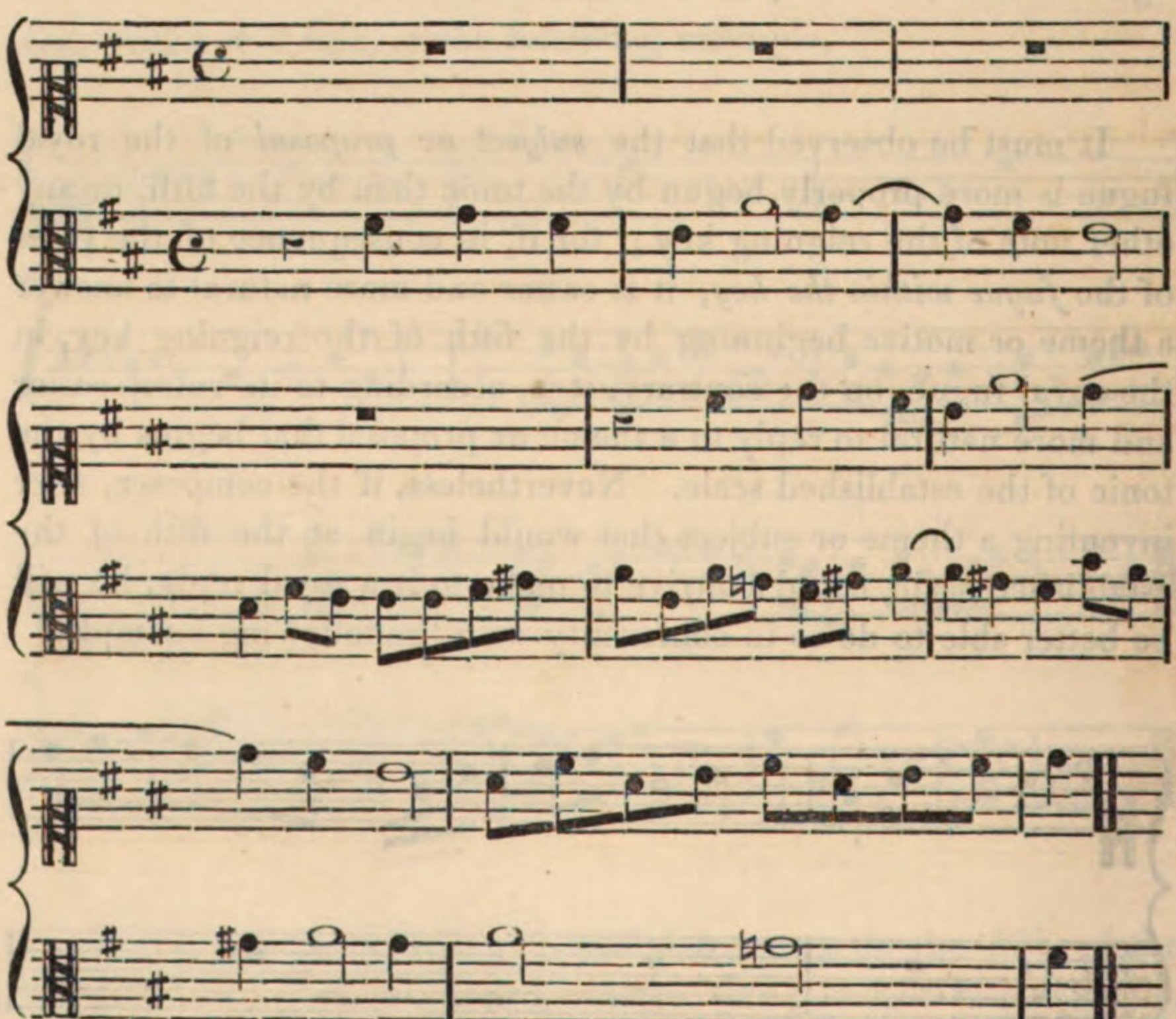
It must be observed that the *subject* or *proposal* of the royal fugue is more properly begun by the tonic than by the fifth, or any other note of the reigning key; for if, in consequence of the rules of the *fugue within the key*, it is easier and more natural to answer a theme or motive beginning by the fifth of the reigning key, in the royal fugue, on the contrary, it is, according to its rules, easier and more natural to reply to a theme or proposal that begins by the tonic of the established scale. Nevertheless, if the composer, after inventing a theme or subject that would begin at the fifth of the established scale, could contrive to make to it a royal reply, he will be better able to do so in conformity with the following example:







It is not only permitted, but it is even of the most impressive effect, to begin the theme or proposal of a royal fugue by the sound 3 of the reigning scale. Masters recommend, in this case, to have the third preceded by a rest; because it supposes the absence of the tonic. This may be seen in the following example:

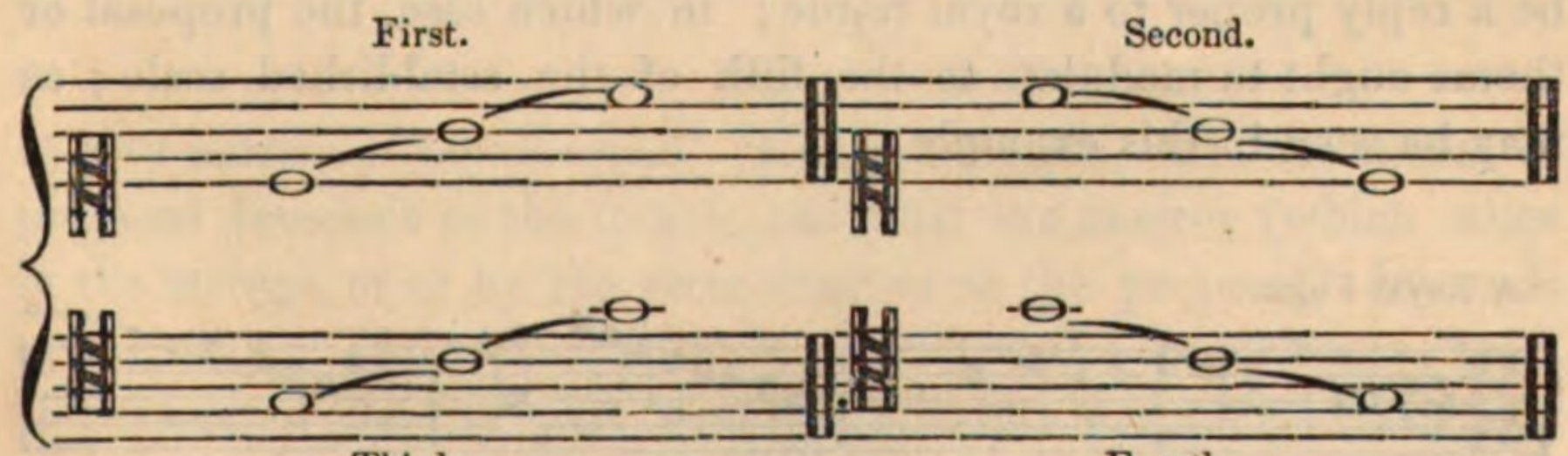


No fugue, however, ought to begin with the fourth, nor with the sixth, of the principal key; because the melody or chant could not help, or could avoid but with great difficulty, beginning out of the reigning scale. Our readers will therefore do well never to begin with the fourth or the sixth the themes or motives of the fugues which they intend to compose.

The principal difference between the *fugue within the key*, and the *royal fugue*, *tied* or *untied*, consists in the answers or replies to the themes or proposals of *fugues within the key* being obliged to keep with them, parity, or lightness as to the figure, or rather as to the nature of the notes, and also, consequently, as to their number; but not as to the intervals between them. The difficulty in contriving the answers to themes or subjects of *fugues within the key* is always in the first two or three notes of both the proposal and the reply; because a law, never to be transgressed, is that the consequent as well as the antecedent—i. e. the answer as well as the theme—must always be concise, and contained within one octave of the reigning key. The object of this law is to oblige the answer to begin with a note of the scale in which the proposal or theme has been written, before it has, through modulation, passed to the fifth: and it is moreover to regulate the answers which are to be made to certain themes or subjects to which royal replies cannot be given, without the reply ending with a sound or note belonging to a key that would not be the one reigning in the fugue, and in which it must consequently begin and end.

In order to understand with greater facility the management of the replies to be made to themes or proposals of *fugues within the key*, it is necessary to observe the four divisions of the octave, which are exhibited in the following example:

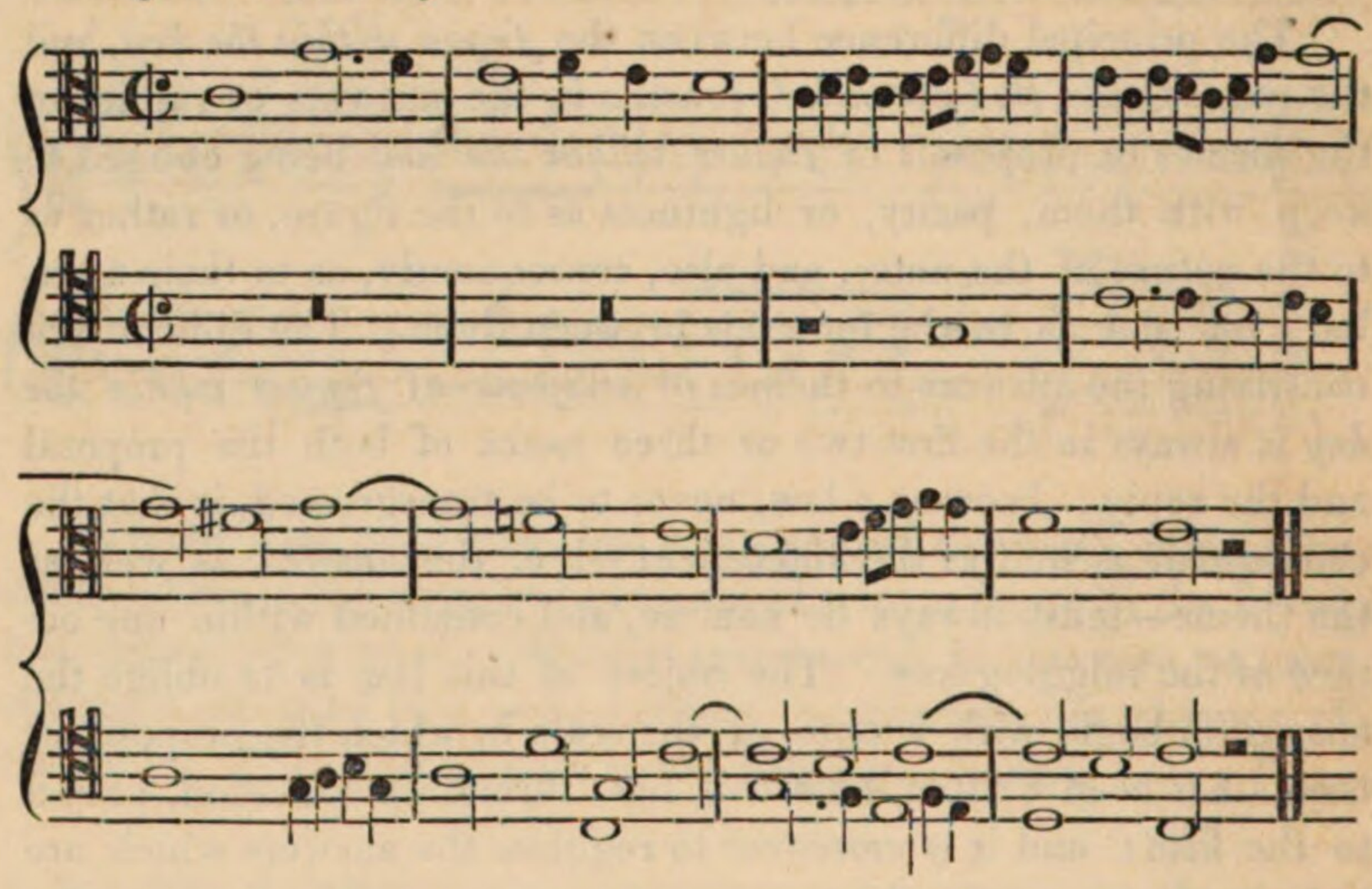
§ 124. *The Four Divisions of the Octave.*



The first two notes are proper to the themes that begin with the tonic, either in ascending or in descending. The first division of

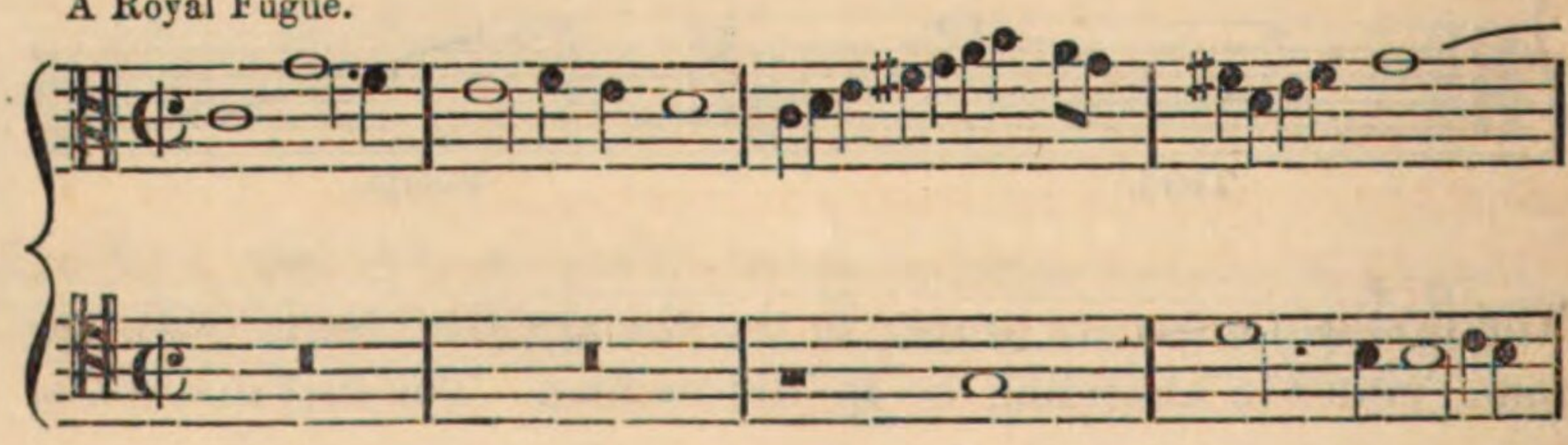
the octave, in the said example, manifests that when the proposal or theme begins with the tonic, and ascends to the fifth, the answer must begin with the fifth, and ascend to the octave of the key-note, as practised in the following example:

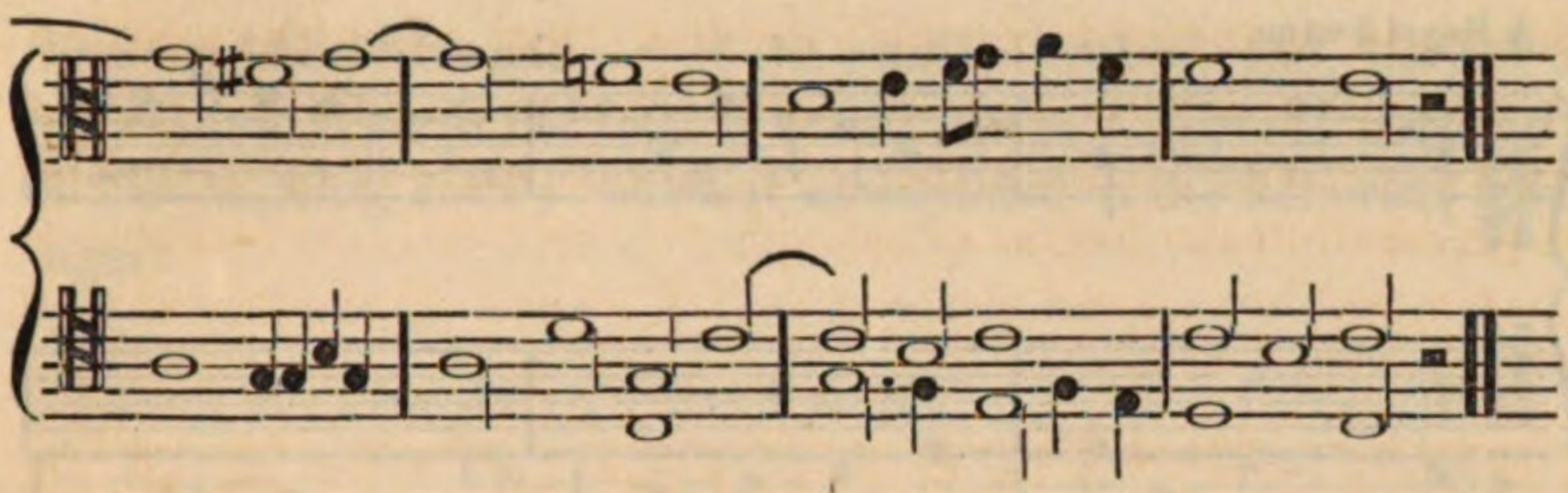
A Fugue within the Key.



This fugue has received the name of *fugue within the key*, because the tenor is obliged, in that fugue, to make its answer within the key before modulation carries the fugue to the fifth of the reigning key; whence it results that the first two notes of both proposal and answer are within the limits of an octave. If the tenor were to make a leap of ascending fifths, as it is performed by the proposal, then the answer would go out of the reigning key (that of *Do*, in the above-quoted example), because it would pass to the fifth (to the *Sol*, in the example aforesaid), and then it would be a reply proper to a royal fugue; in which case, the proposal or theme ought to modulate to the fifth of the established scale; as may be seen in this example:

A Royal Fugue.

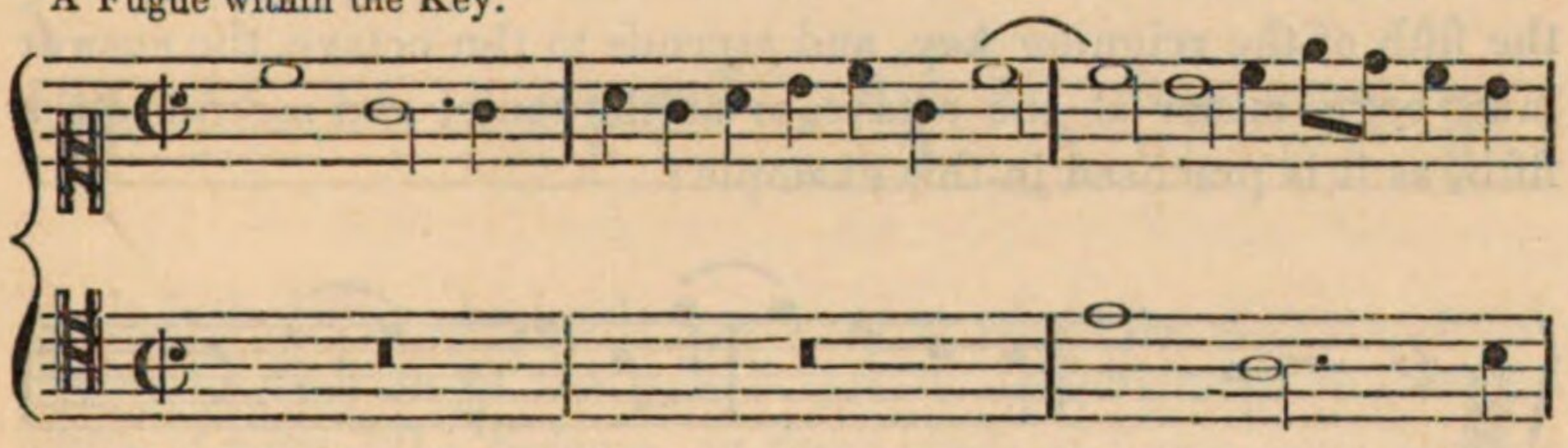




which shows how the *fugue within the key* may be converted into a *royal fugue*.

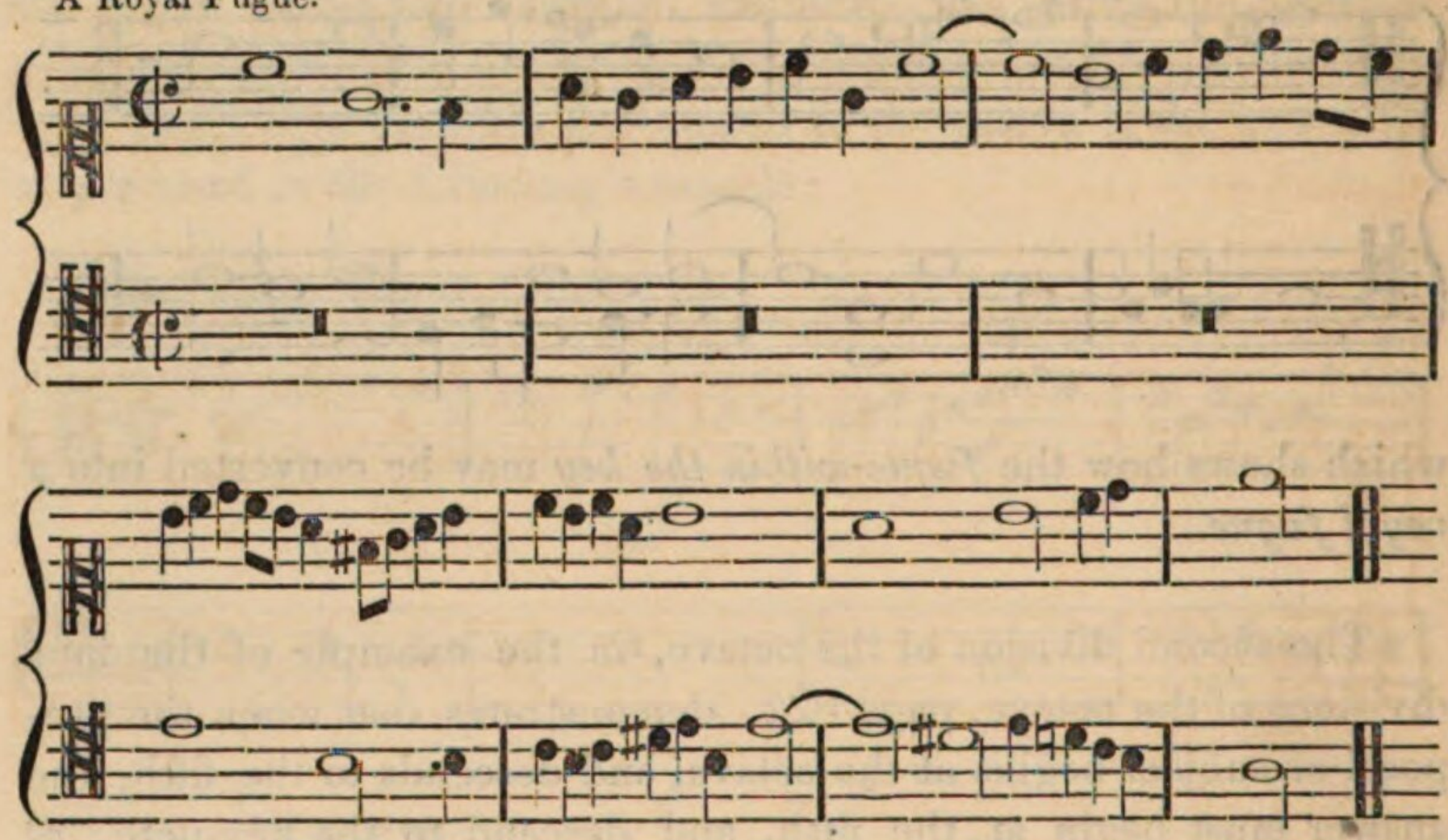
The second division of the octave, in the example of the four divisions of the octave, page 321, demonstrates that when the proposal or subject begins at the octave, and descends to the fifth, the answer must begin at the fifth, and descend to the key-note; as may be seen in this example:

A Fugue within the Key.

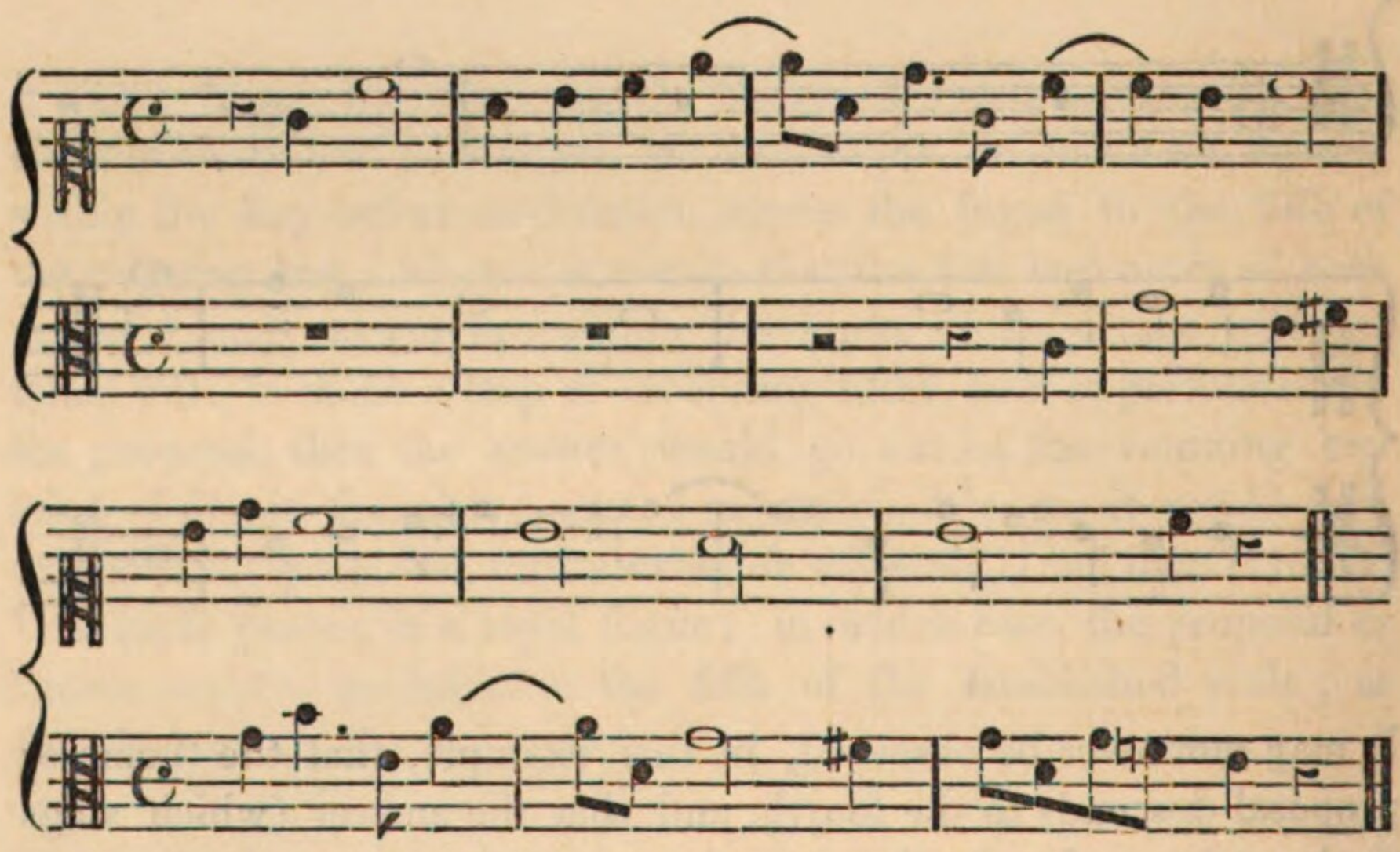


It may moreover be observed, in this example, that the theme or proposal descends to the fourth, and that the answer (which sings in the strings, of or by the same degrees as the proposal) descends to the fifth. If the contralto were to descend a fourth more, as it is performed by the part which makes the proposal—viz. which utters the theme—the contralto's answer would go out of the key of *Do*, by which it would be converted into a reply of royal fugue. In this case, the theme or subject ought to modulate at the fifth; which is exemplified in the paradigm here subjoined:

A Royal Fugue.



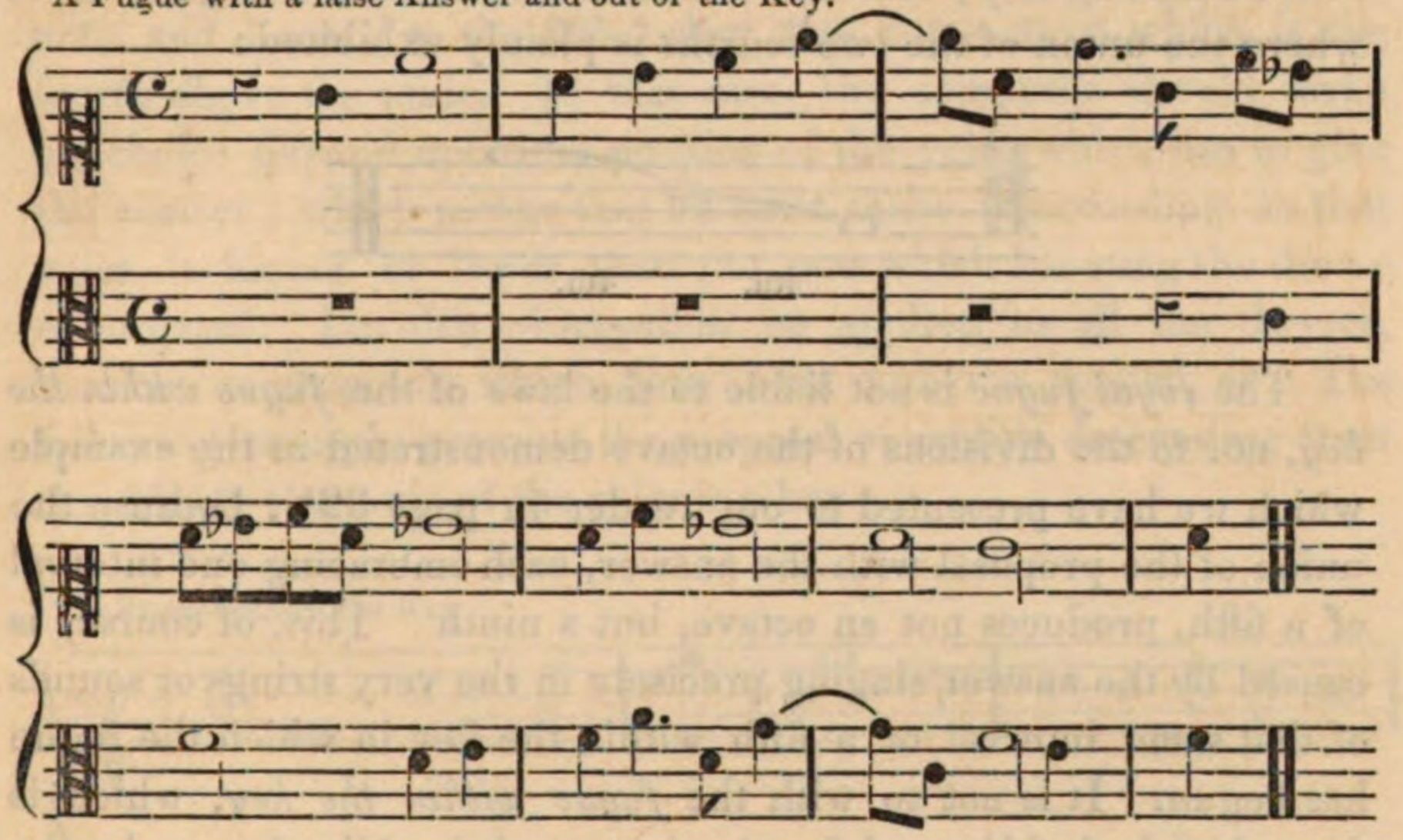
The third division of the octave, in the example of its four divisions, demonstrates that when the intent or proposal begins at the fifth of the reigning key, and ascends to the octave, the answer must begin either at the octave or at the tonic, and ascend to the fifth, as it is practised in this example:



which shows that the contralto answers in the same key as the proposal or theme has been sung, and, by making the leap of the fifth in ascending, observes the law of the third division just explained, and at the same time enters into the strings or sounds proper to the reigning key. If the counter-tenor were to make a leap of a fourth in ascending, as is executed by the theme or proposal, the answer

then would be false and out of the established key, and, instead of modulating towards the fifth, it would advance a step to the fourth of the reigning scale; which is exemplified in the following paradigm:

A Fugue with a false Answer and out of the Key.

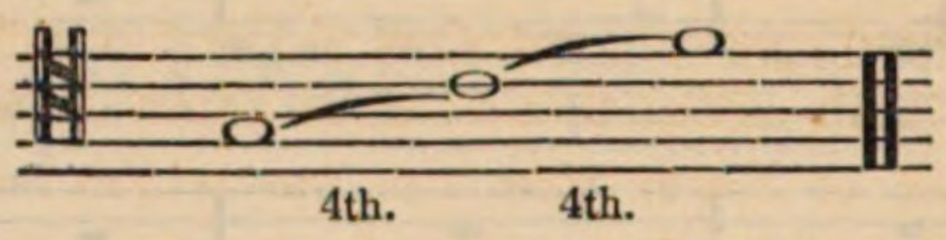


It is therefore absolutely necessary to adjust the answers according to the division of the octave that is demonstrated in the example of page 321; because, in these kinds of fugue, very slippery indeed are the paths, through which the composer may fall into error.

The octave is divided from the tonic, or from its octave to fifths, or to fourths; so that when the theme begins at the tonic and ascends to the fifth, and the answer begins at the fifth and ascends to the octave of the reigning key, as has been already shown, the whole extent of the octave is cut asunder, from the tonic to the fifth inclusive, by the grave part, and from the octave to the fourth inclusive by the acute voice. And reciprocally, when the theme or proposal begins at the fifth of the tonic and ascends to its octave, and the answer begins either at the octave-note or at the tonic, and goes either down or up an interval of a fifth, then the extent of the octave is cut asunder after the fourth by the grave voice, and after the fifth by the acute part. This division takes place *vice versâ* when the *proposal* or *theme* is *ascendant*. From all which it results that the answer preserves the nature of the reigning key, and of a well-contrived modulation.

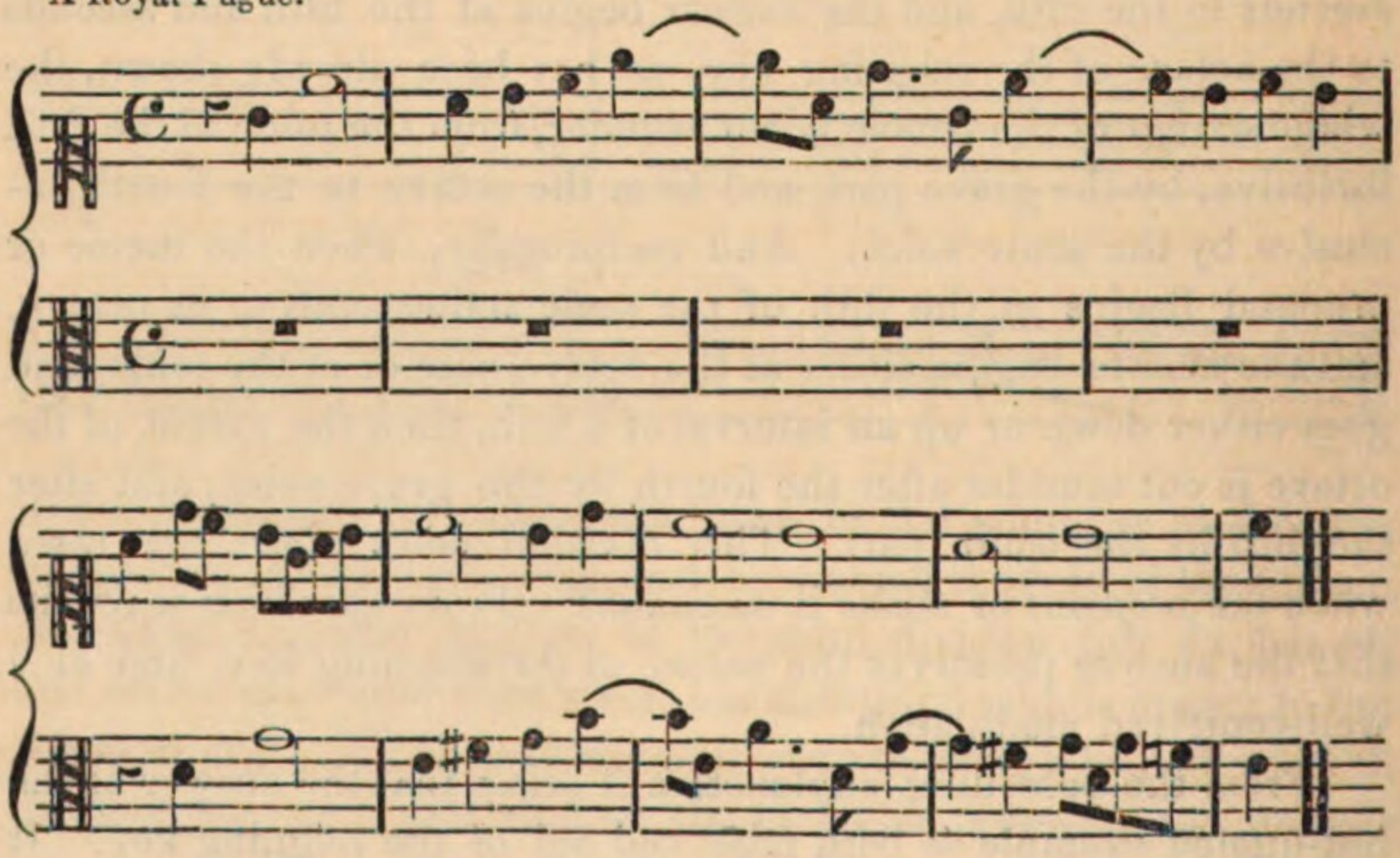
From the preceding explanation it arises that the answer of the last-quoted example is both false and out of the reigning key. It

is obvious that the fugue effectively finds its natural field or extent within two fourths, which produce a minor seventh, but not an interval of an octave, as might perchance appear at first sight. On this account, the composer, instead of passing through modulation to the fifth, does really ascend no further by it than to the fourth of the reigning key; which is demonstrated in the ensuing example, where the union of the two fourths is plainly exhibited:



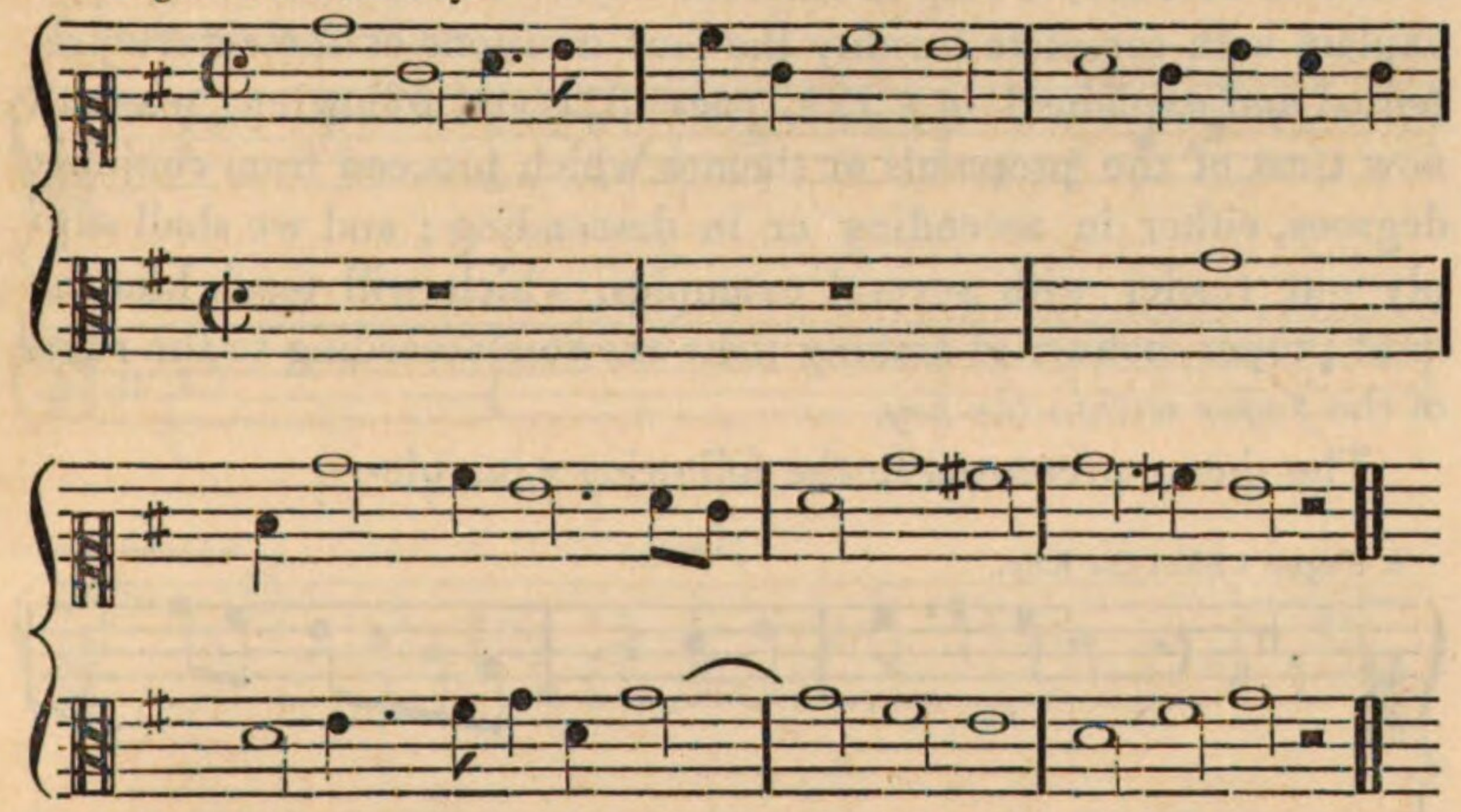
The *royal fugue* is not liable to the laws of the *fugue within the key*, nor to the divisions of the octave demonstrated in the example which we have presented to our reader in page 321; because the union of the proposal with the answer, each embracing one interval of a fifth, produces not an octave, but a ninth This, of course, is caused by the answer singing precisely in the very strings or sounds of that same interval of a fifth within the key in which the fugue has begun. It is not so with the *fugue within the key*, which is formed of both fifths and fourths, because it is obliged to make the answer within the key in which the proposal or theme has been uttered. The last *fugue within the key* just presented to our reader can be converted into a *royal fugue*, by causing the motive or theme to modulate at the fifth of the reigning key; as it is done in this example:

A Royal Fugue.



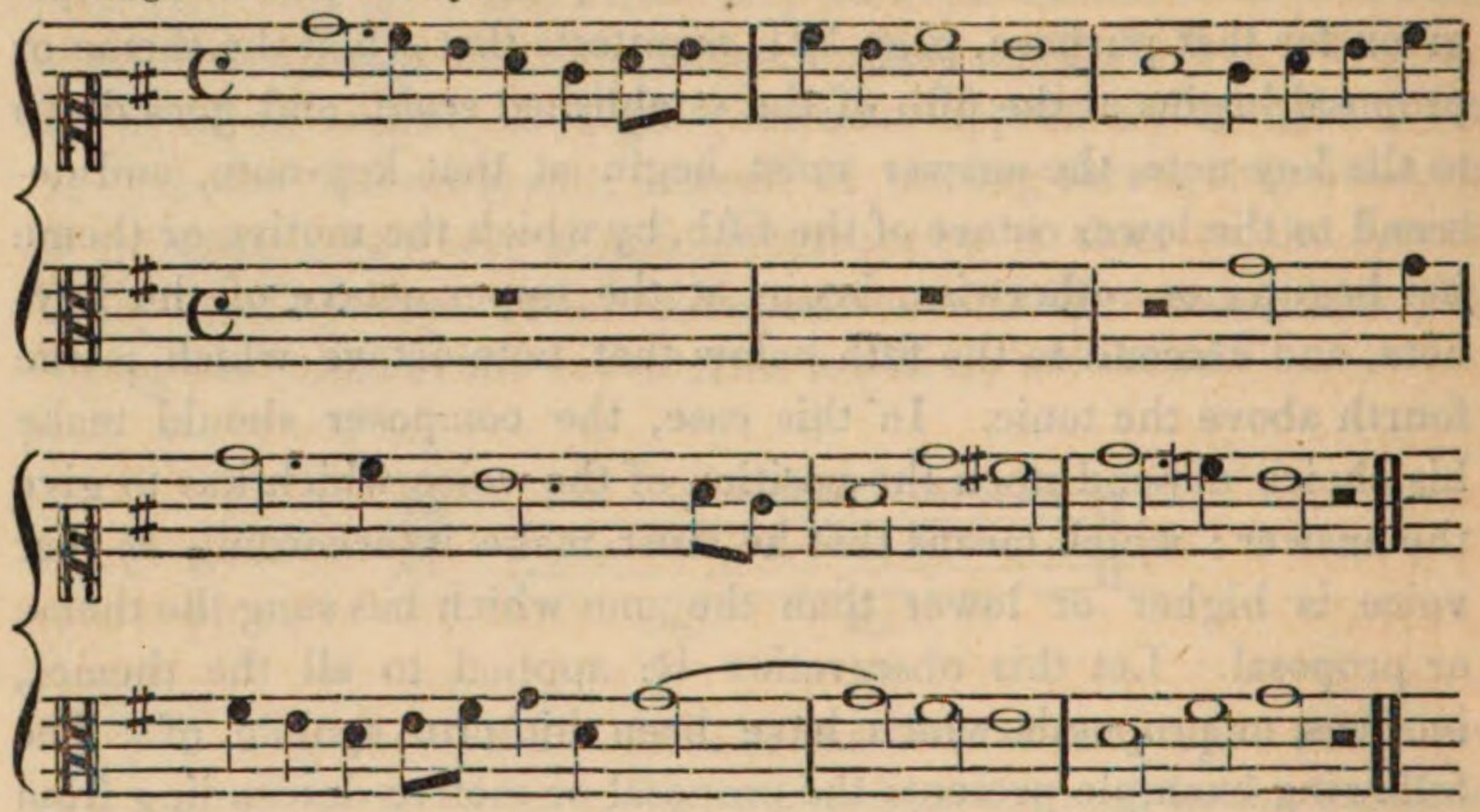
The fourth division of the octave, represented in the example given for that purpose, page 321, manifests that when the theme or proposal begins at the fifth of the established scale, and goes down to the key-note, the answer must begin at that key-note, and descend to the lower octave of the fifth, by which the motive or theme has begun; or, otherwise, begin at the upper octave of the key-note, and descend to the fifth below that note-octave which is the fourth above the tonic. In this case, the composer should make his choice depend upon the position of the voice which has to give the answer; which means that he must make it according as that voice is higher or lower than the one which has sung the theme or proposal. Let this observation be applied to all the themes, motives, or proposals which have been hitherto spoken of. The following example presents the proposal or motive descending from the fifth to the tonic of the reigning key:

A Fugue within the Key.



A subject or proposal does not always execute with its first two notes, either in the ascending or in the descending movements, all the leaps which we have hitherto mentioned in the rules of the *fugues within the key;* because it passes sometimes through other notes before uttering the one which performs the skip. It is, on this account, indispensable to observe which is the most acute and which the most grave sound, in order to be able to make an adequate answer. This difficulty is thoroughly cleared off by an attentive examination of the fugue presented in the ensuing example, which is composed with the theme or proposal given in our last example:

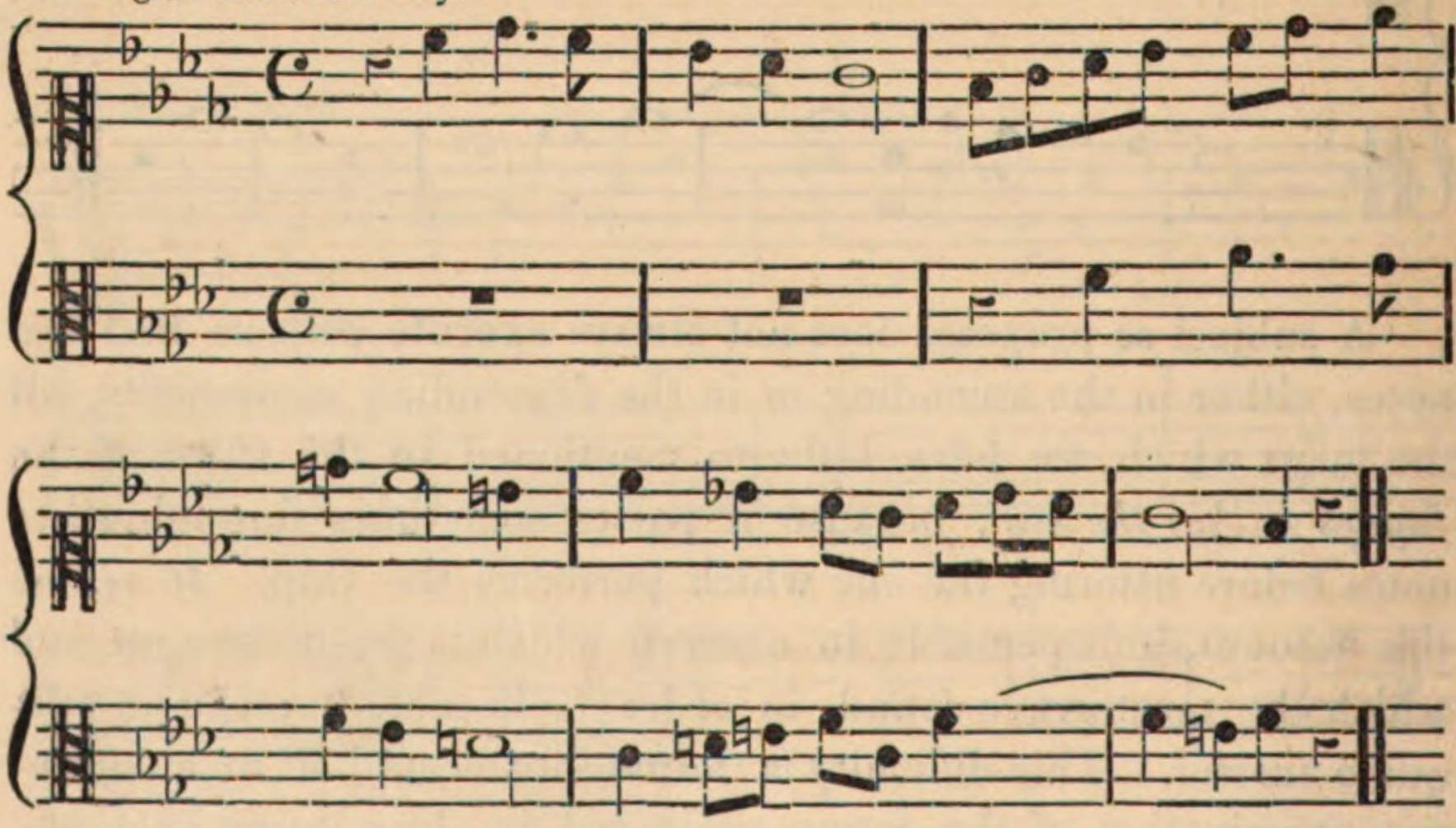
A Fugue within the Key.



§ 125. We have hitherto spoken of the themes or proposals which ascend or descend, or skip in different ways. In order successively to explain with complete lucidity the four divisions of the octave presented and explained in § 124, page 321 and following, we shall now treat of the proposals or themes which proceed from conjunct degrees, either in ascending or in descending; and we shall supply our reader with several examples, which will teach him the most proper manner of making their answers according to the rules of the *fugue within the key*.

The theme presented in the following example—

A Fugue within the Key.

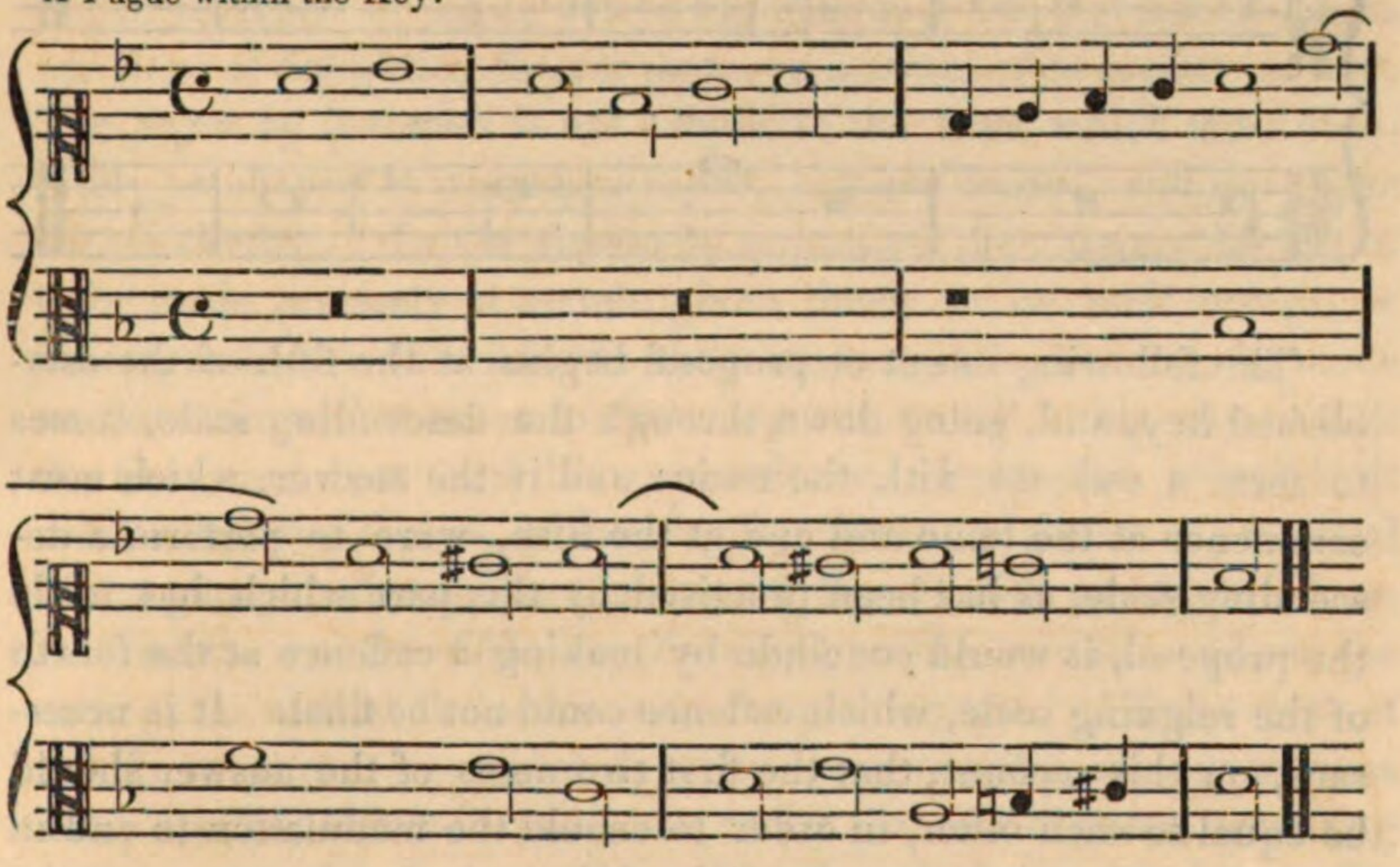


begins at the fifth of the established key, ascends by conjunct degrees, returns to where it was, and, descending, goes down to the

key-note; for which, the answer must begin at the key-note, go upwards to the fifth, and immediately conclude with the tonic again. If the answer, chromatically ascending to the fifth, were to go down only a degree, as practised by the proposal when it commences to retrocede, it would then end at the fourth of the reigning key. Consequently, the answer, in order to arrive at the fifth of the reigning key before it returns to and ends in the tonic, must begin by performing a leap of a third; as may be seen in the example aforesaid. In it, the first note belongs to the reigning key, as it must be done in a *fugue within the key;* and the second note is peculiar to the scale to which the modulation has led, and which is grounded upon the fifth of the key in which the fugue has begun, and in which it must end. See again the above example.

The following example—

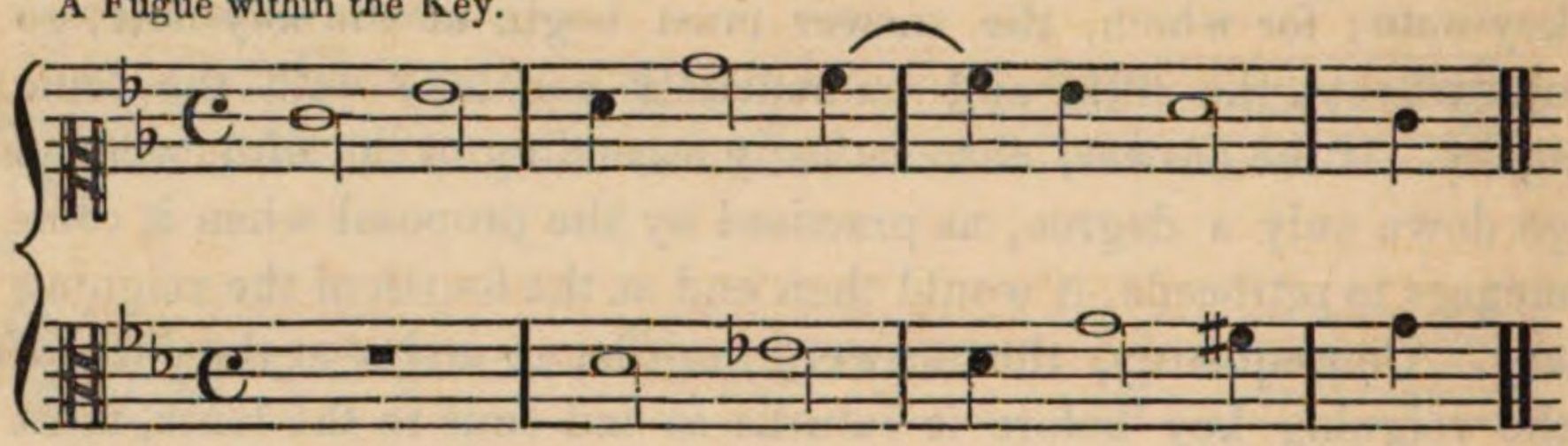
A Fugue within the Key.



presents a theme or proposal similar to the preceding one, in which the first two notes of the motive or theme ascend by conjunct degrees, and in which also the answer begins by a skip of a third, according to the rules already given.

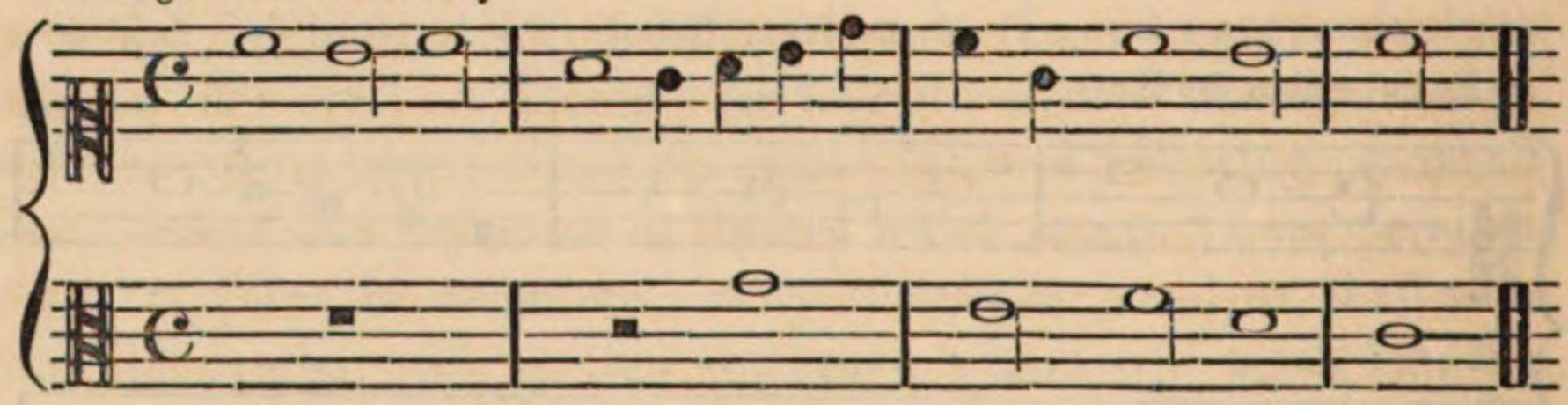
The following fugue shows the leap of a third practised by the voice which makes the proposal, and also the note that ascends by conjunct degrees in the part which makes the answer. See the ensuing example :

A Fugue within the Key.



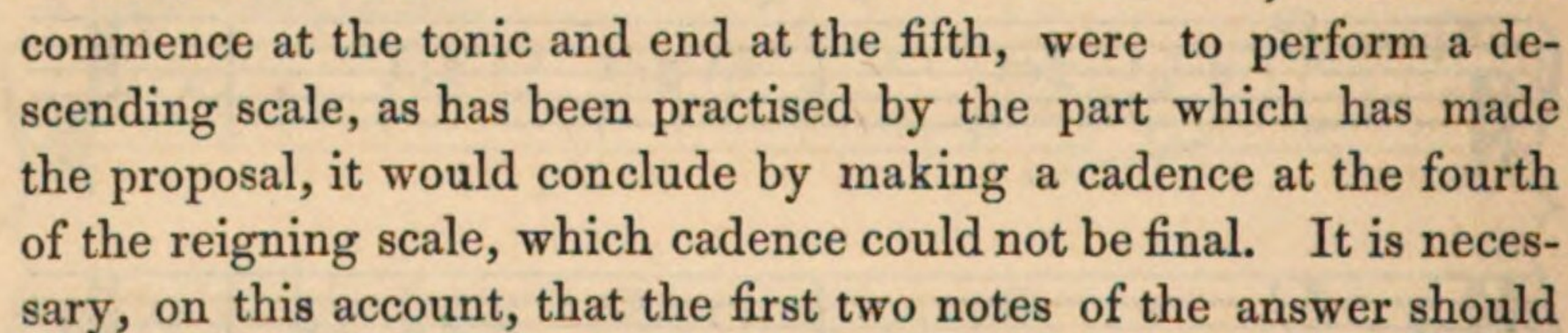
The next example exhibits a subject or proposal which, beginning at the upper octave of the key-note, descends by conjunct degrees, ascends again, and ends at the fifth. The answer commences at the fifth, goes down to the third, for the reason above mentioned, and comes to end at the tonic; as our reader may see in the following example:

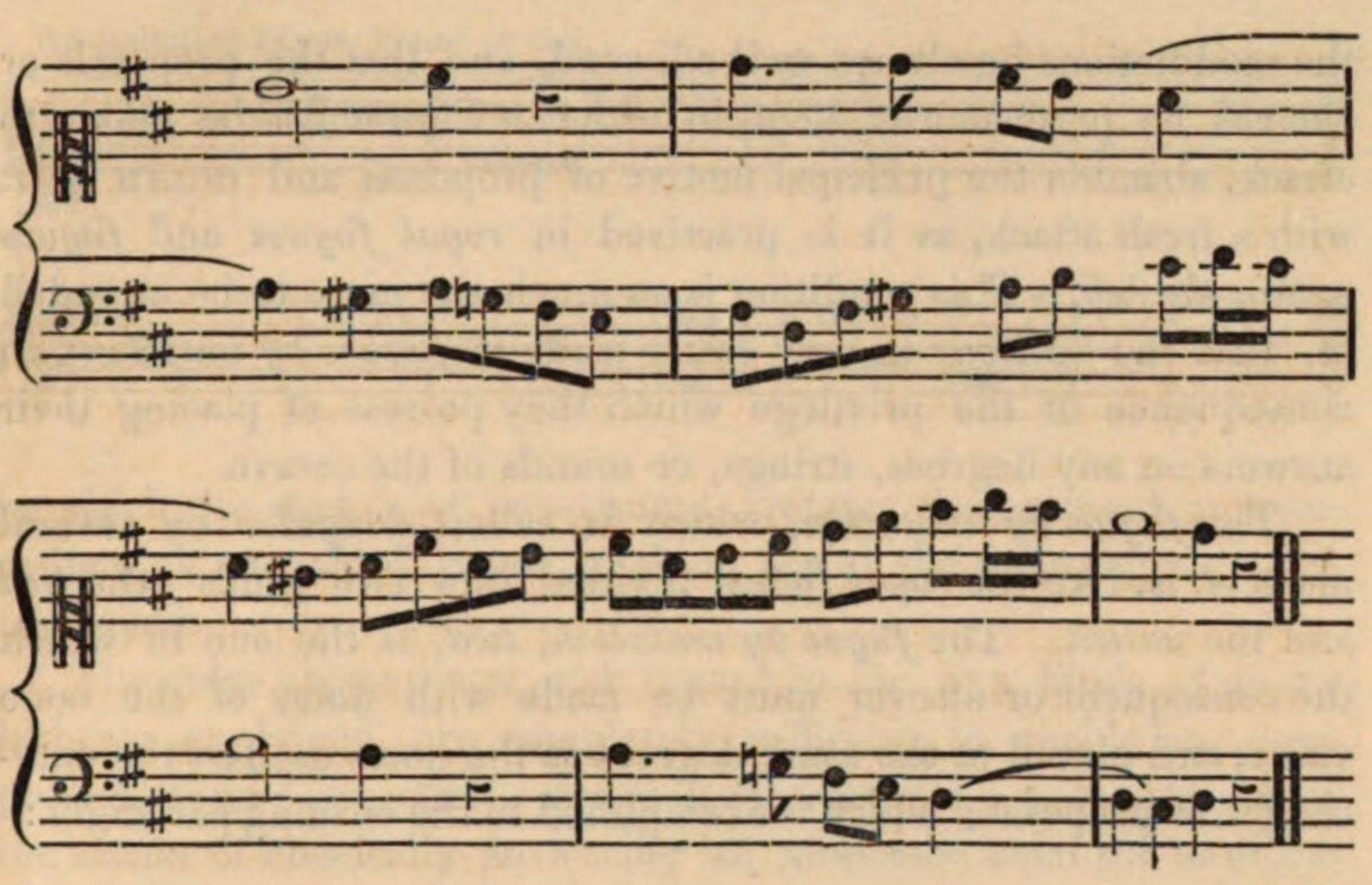
A Fugue within the Key.



The following intent or proposal begins at the fifth of the established key, and, going down through the descending scale, comes to form a cadence with the tonic: and if the answer, which must commence at the tonic and end at the fifth, were to perform a descending scale, as has been practised by the part which has made the proposal, it would conclude by making a cadence at the fourth of the reigning scale, which cadence could not be final. It is necessary, on this account, that the first two notes of the answer should be equal to each other, in order to enable the modulation to end in executing the cadence on the fifth of the reigning key; as may be observed in the ensuing example:

A Fugue within the Key.



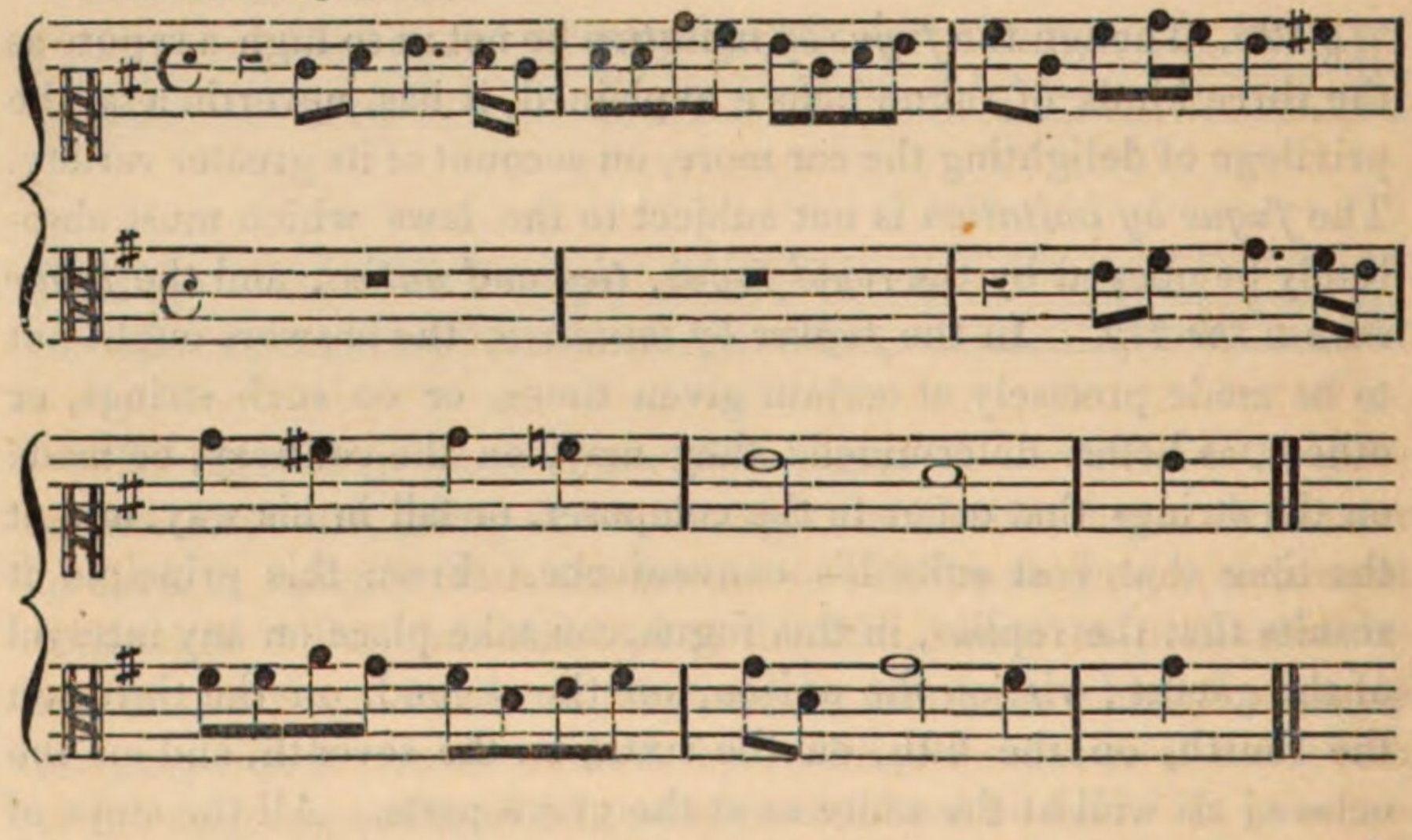


§ 126. Though the *fugue by imitation* be not in so high a repute as the three kinds of fugue before explained, it has, nevertheless, the privilege of delighting the ear more, on account of its greater variety. The *fugue by imitation* is not subject to the laws which must absolutely be obeyed by the *royal fugue*, *tied and untied*, and the *fugue within the key*. In the *fugues by imitation*, the answers ought not to be made precisely at certain given times, or on such strings, or others, as before determined: they may, on the contrary, be made on the strings that occur to the composer, or fall in his way, and at the time that best suits his convenience. From this principle it results that the replies, in this fugue, can take place on any interval of the gamut; viz. on the unison, on the second, on the third, on the fourth, on the fifth, on the sixth, on the seventh, and on the octave; as well at the acute as at the grave parts. All the steps of this fugue may be considered as so many attacks, mixed with as many strains, either by conjunct or by disjunct degrees, according to the composer's fancy. These attacks, which, in this fugue, fills the office of the intermediate parts, are taken from the theme or proposal, when it can supply them; when it cannot, they must be invented, and left to wander and circulate throughout the whole fugue all the while it lasts, and in different ways. Their principal aim is to keep up a lively fight, a continual wrestling, between the various parts of the fugue, to render it more skilfully woven and more pleasant. It is, however, free from every liability to those melodic laws to which the other fugues are imperiously subservient. It is, on this account, indispensable, in the *fugue by imitation*, that

the modulations be always well adjusted, and that the proposals or themes be permanently kept in action. Care must be taken to attack, abandon the principal motive or proposal, and return to it with a fresh attack, as it is practised in *royal fugues* and *fugues within the key*. This condition is so much the more to be attended to, that the *epilogue* is very easily made in *fugues by imitation*, in consequence of the privilege which they possess of placing their answers on any degrees, strings, or sounds of the octave.

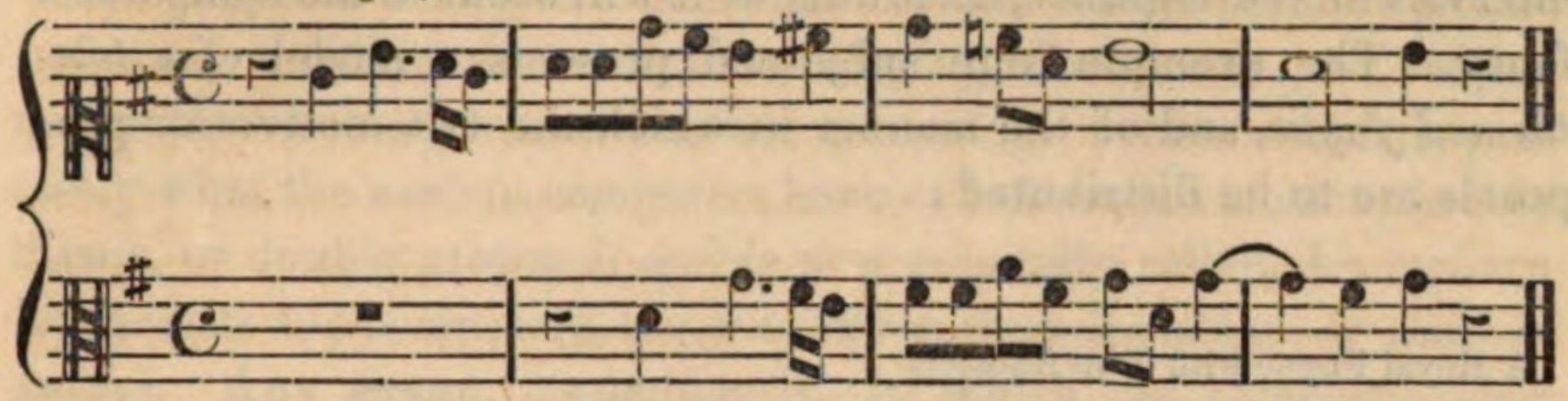
The *fugue by imitation*, which is called *irregular* by several masters, is, like the *royal fugue*, divided into two kinds—the *tied* and the *untied*. The *fugue by imitation, tied*, is the one in which the consequent or answer must be made with notes of the same value, and placed at the same degrees as the notes used by the antecedent or proposal; which is exemplified in the ensuing paradigm:

An Imitation Fugue, tied.



The *fugue by imitation, untied*, is not submitted to this rule; but it must imitate the theme or subject in some of its parts. The answer or consequent cannot be like the theme or antecedent in more than three things: viz. in the figure or nature of the notes, in the notes themselves, and in the intervals at or degrees on which they are placed. It would, however, be most acceptable, if a determined interval were agreed upon between masters and composers, and made known, for the purpose of the replies imitating the motives or proposals with more uniformity than they do now-a-days in the *fugues by imitation*. That imitation should be made in conformity with the example which we present to our readers in the paradigm which follows:

An Imitation Fugue, untied or tied.



in which the answer or consequent imitates the proposal or antecedent at one third below, making use of the same figures it has employed.

The rules above given with regard to the five kinds of fugue hitherto explained, are completely sufficient to enable any composer to fugue any strain, any melody whatever; since they afford the means of classically answering all proposals, even the most extravagant.

SECTION III.

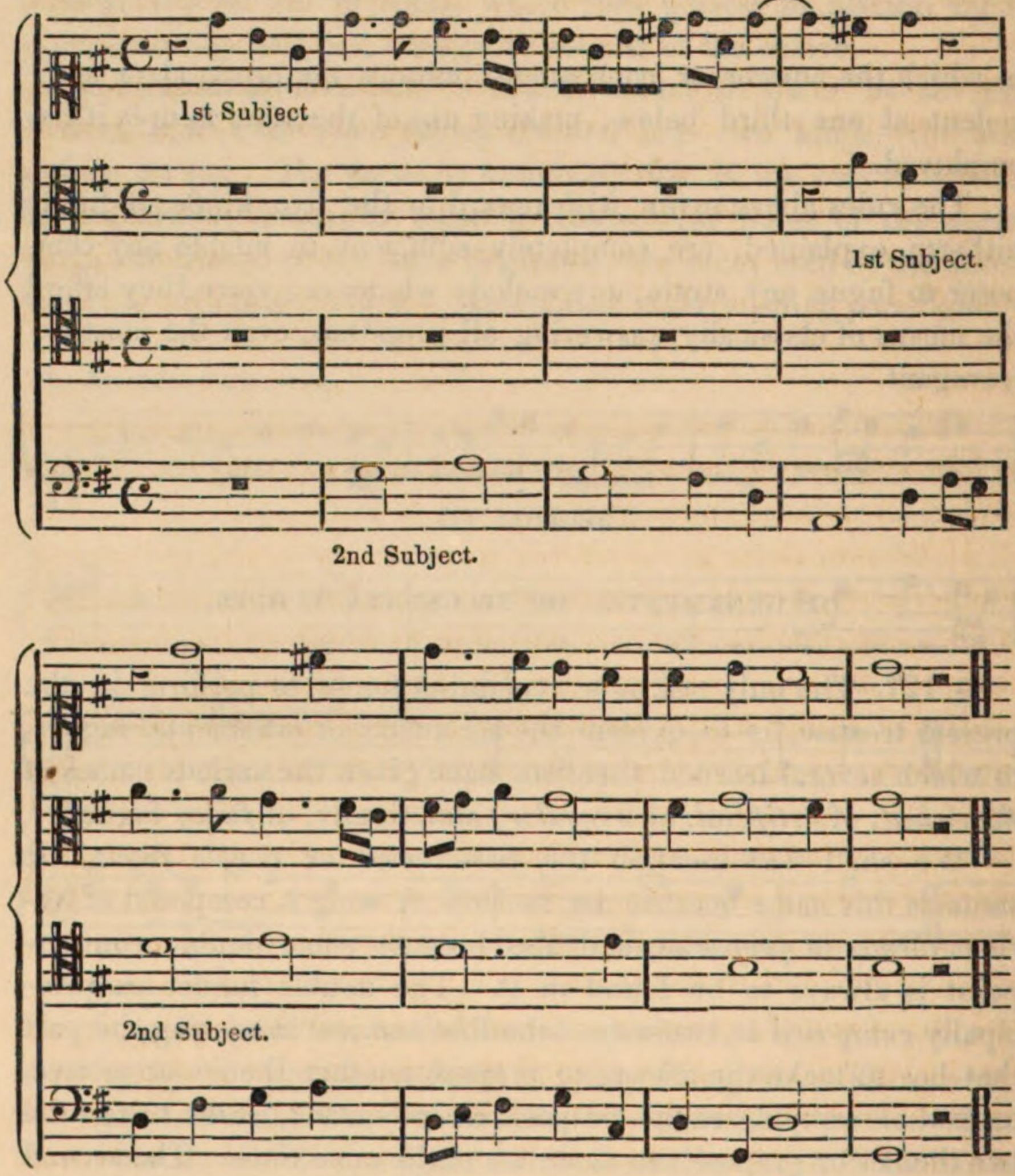
OF ORNAMENTAL OR SECONDARY FUGUES.

§ 127. The only task now remaining for us to perform in the present treatise, is to explain the secondary or ornamental fugues, to which several learned theorists have given the various names of *flourished*, of *artificial*, of *irregular*, and, finally, of *fancy* fugues.

We shall first mention the *two-themed* or *double fugue*. It assumes this name because its melody or song is composed of various *themes* or *proposals*, and also because some double counterpoint is always to be found in it. The double fugues are principally composed in two ways: the first consists in causing the part that has to make the answer to propose another theme or motive, instead of replying to the proposal already made, which brings the two themes or proposals to modulate at the same time. The second consists in the following arrangement: the part which proposes the motive or subject does, immediately after having modulated it, stop and remain silent during a long rest, after which it forms a double counterpoint on the answer, or utters another proposal or theme, for the purpose of enabling the other parts to modulate alternately the two themes or proposals, and to successively exchange between themselves, grave and acute, and *vice versâ*, their imitations or repetitions at the fifth, at the fourth, at the octave, or at those three

intervals mixed together, according as it will occur to the composer's fancy. The example here subjoined presents a model of a *two-themed fugue*, and of the manner in which the two motives or proposals are to be distributed:

A Royal Fugue with Two Subjects.



The *adversative*, *anti-theme*, or *counter-motive*, of which we have already spoken in § 122, Section 1, of the present chapter, corresponds with (or rather is the same thing as) what we have called the second theme, or the double proposal, in this section and present paragraph. It is effectively executed by the part which has sung the first motive, after it has taken a rest. When the part

which proposes a subject has modulated, and after a rest, the adversative or anti-theme commences, singing above the part which makes the answer, whilst another part sings below. This is precisely what the ancient composers have called second motive, double theme, or double proposal, and is now generally called, by modern harmonists and composers, the *anti-theme*, the *adversative*, or *counter-motive*. Any fugue, consequently, in which the composer, after having placed a second motive or a counter-motive behind the primitive proposal or motive, will introduce also an adversative or an anti-theme after the answer, will be denominated a *fugue of three themes, motives*, or *proposals*.

Some authors, formerly, attempted to compose fugues with four motives or subjects; but, as they were all more or less confused, entangled, and unintelligible in their mechanism, they were long ago abandoned by all composers of clear ideas and lucid understanding.

The subjects or proposals, to be easily perceptible, should never be followed by the adversative, but after a rest; because silence renders them more apparent.

If the *anti-theme* or *adversative* were closely joined to the song of other parts, it could appear as a strain or melody whatever destined to fill up or complete the harmonization or counterpoint, instead of being readily and clearly perceived as a true *adversative*.

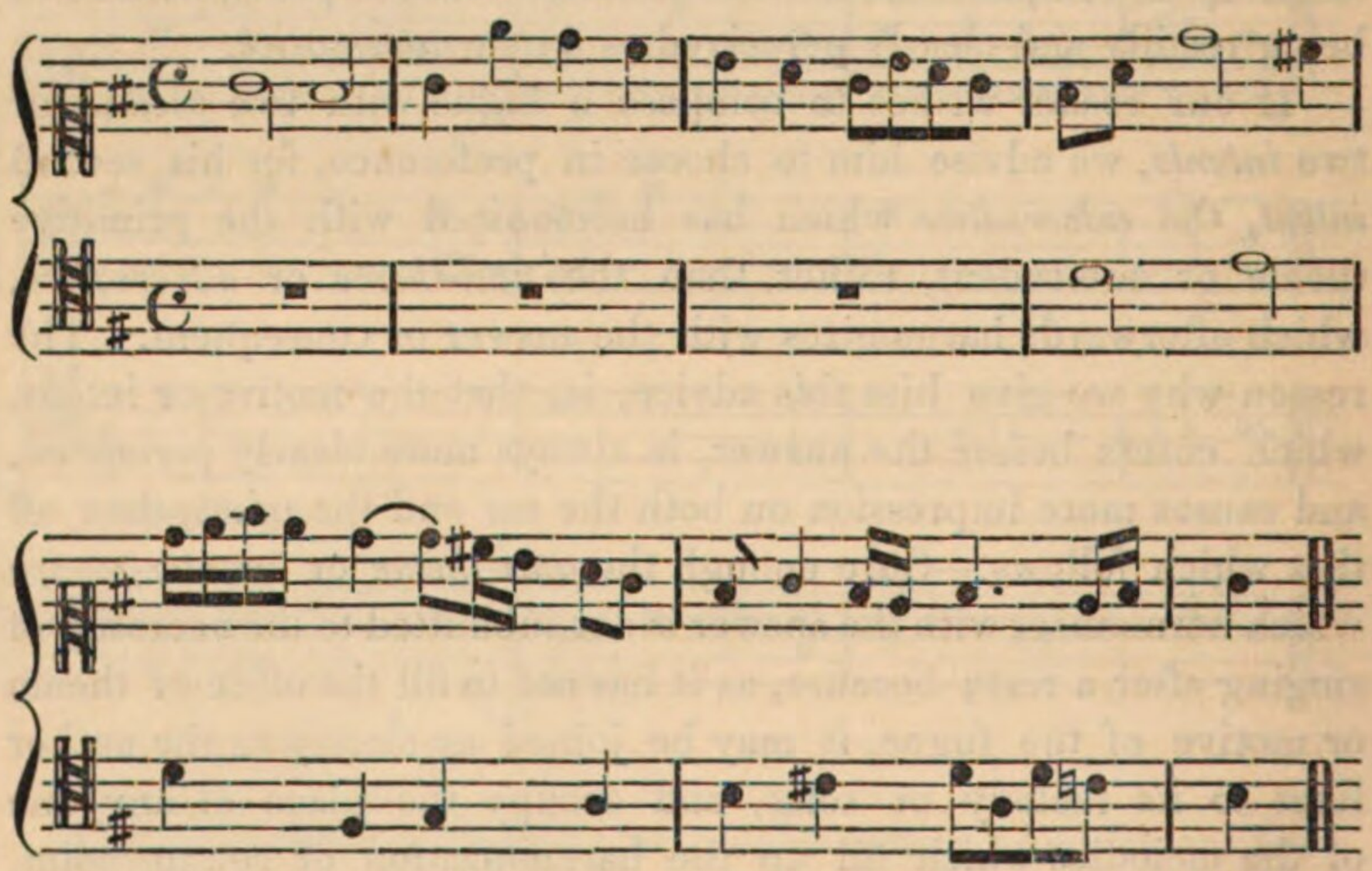
If our reader wishes to compose a fugue with two *themes*, or two *intents*, we advise him to choose in preference, for his second *intent*, the *adversative* which has harmonized with the primitive theme or antecedent, rather than the *anti-theme* or *adversative*, which afterwards harmonizes with the answer or consequent. The reason why we give him this advice, is, that the motive or intent, which enters before the answer, is always more clearly perceived, and causes more impression on both the ear and the mind, than all that which follows.—Sure enough the *anti-theme* or *counter-motive* which harmonizes with the answer is not submitted to the necessity of singing after a rest; because, as it has not to fill the office of theme or motive of the fugue, it may be joined as closely as the author likes to its melody or song, and occupy the place of any one of the melodies which fill up the harmonization or counterpoint. However, were it to happen that the anti-theme or adversative should be chosen to appear as second or as third theme or proposal, and it could not be managed to make it enter after a rest, either at the beginning or at the middle of the fugue, in this case it could be rendered conspicuous and quite intelligible by means of a great

skip which might be made by the part which would commence with the said adversative or anti-theme; it being obvious that the greater the leap which, in this case, fills the office of a rest, the more perceptible it is to, and the more noticed by, the ear.

The preceding rule may be applied to the entrance or starting of the themes or proposals, and adversatives, in all the kinds of fugues of which we have hitherto treated.

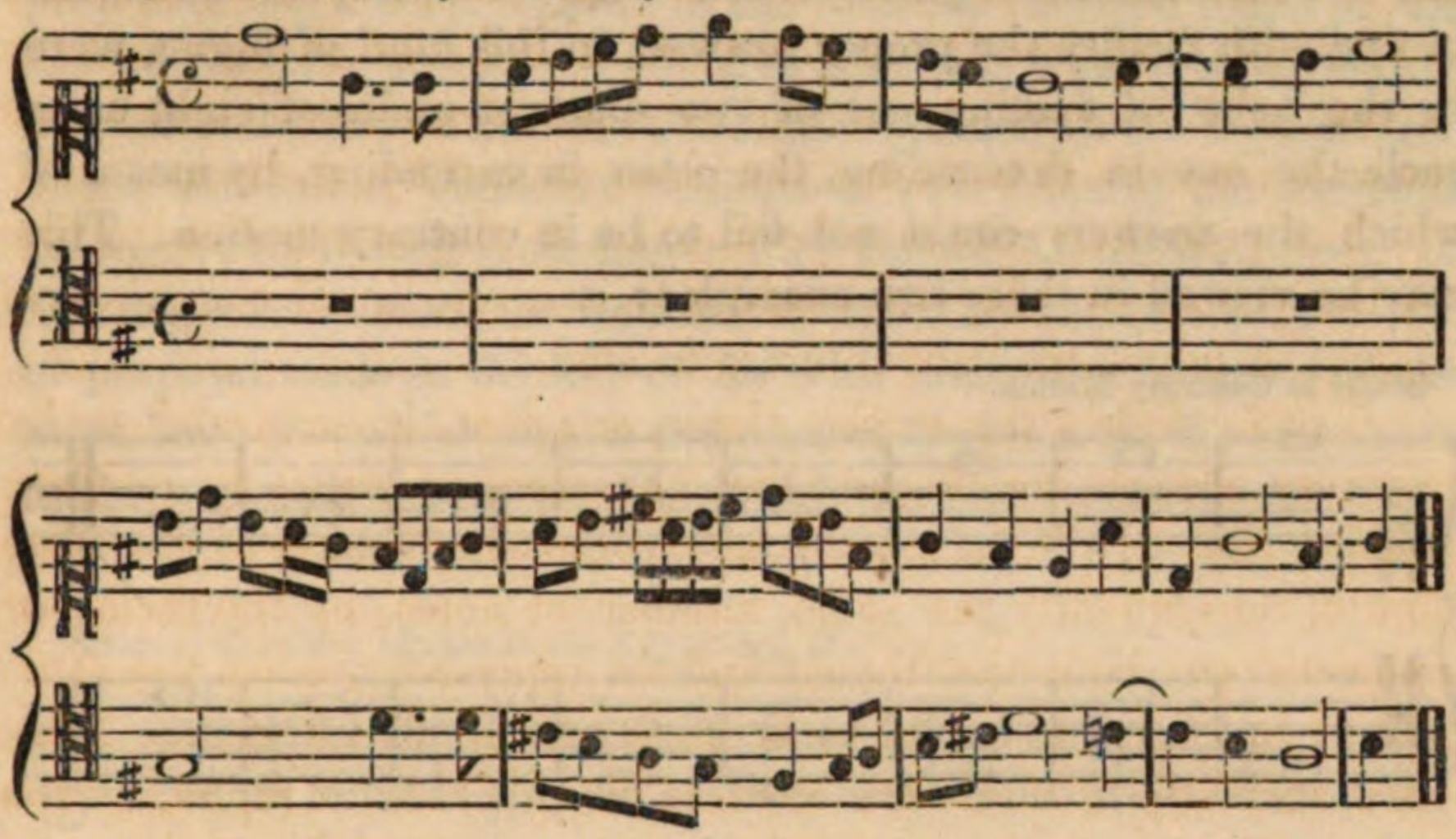
§ 128. When the *motive*, *theme*, or *intent*, is answered to by contrary motion, the fugue takes the name of *fugue by contrary motion, tied*. In it the answer must comprehend notes of the same figure, consequently the same number of notes, as the theme or subject does: both the theme and the reply must make the same skips; but they are bound to keep parity in all intervals. They used anciently to make the answers, in this kind of fugue, at the unison, or at any other interval whatever; but modern composers have, and very properly too, adopted as a rule that the reigning key should be quite established and fixed in the formation of the answers; as is demonstrated in the *royal fugue by contrary motion, tied*, which our reader will find in the ensuing paradigm:

A Royal Fugue with Contrary Motion.



When, in a *fugue within the key*, we wish to write the answer by contrary movement, it will be well to do so conformably with this example:

A Fugue within the Key in Contrary Motion.



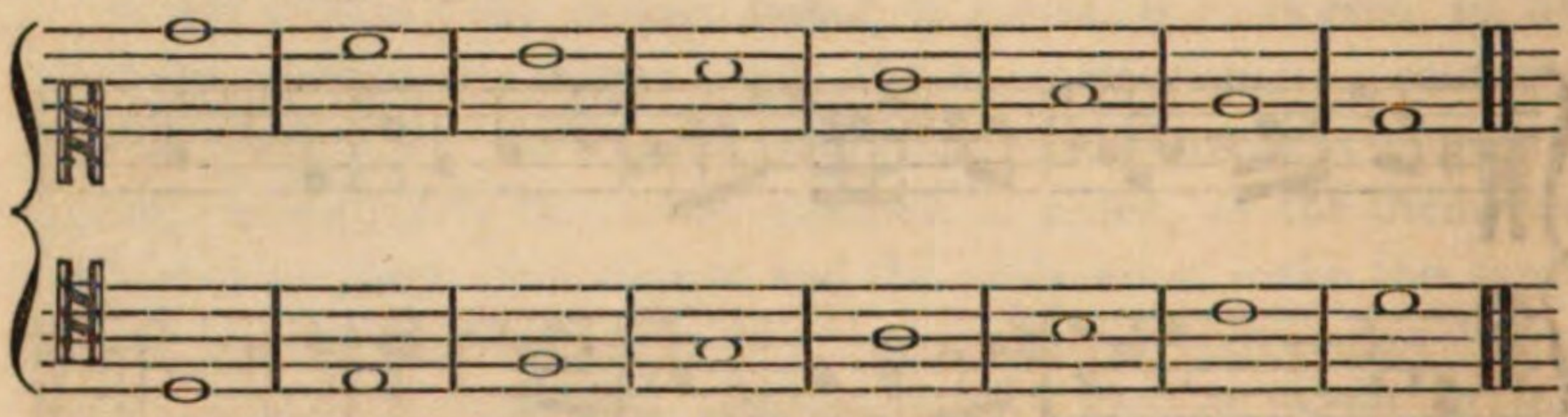
The fugue by contrary motion may rank among royal fugues, on account of the leap of the fifth performed by one of the parts.

The fugue by contrary motion opens a vast field to various arrangements between the parts; it gives room to a great diversity in their disposition and in their alternateness; it supplies many differences in their weaving or contexture; it allows talented and witty composers to find out the most ingenious contrivances. In this fugue, answers may be made by contrary motion almost at its beginning; viz. after the proposal, or by inverting the said proposal or intent by means of the exchange of their respective places made by different parts; all of which may easily, with the help of their frequent interchange, and alternating by turns in similar, oblique, and contrary motion, form between themselves a dialogued melody, full of eccentricity, grace, and charm. The attack can be made either by the proposing or by the answering parts; sometimes all the parts make an offensive alliance to attack simultaneously; first, the principal theme or proposal, and afterwards the reply; and vice versâ.

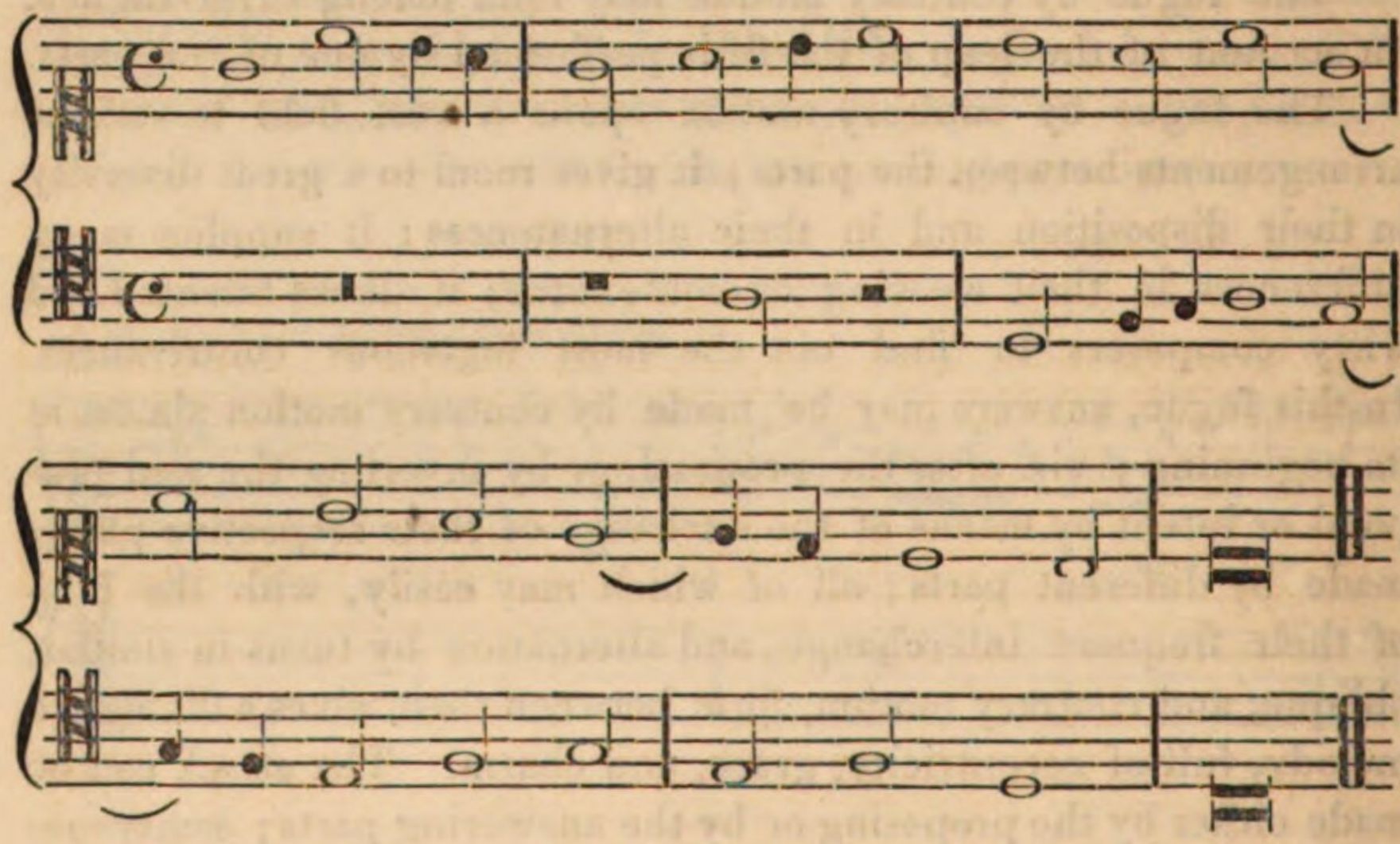
§ 129. *The fugue by contrary motion, free* or *untied*, is the one in which, as in the preceding fugue, the answer must always be made by a motion contrary to that of the intent or proposal. The figures of the notes of the answer must be the same as those of the notes of the proposal, the number of the said notes must consequently be also the same: but in the fugue by contrary motion, untied, the answer and the proposal are not bound to be equal in the skips made by their notes; and these may, if it cannot be done otherwise, differ somewhat in their respective intervals. For these

last two reasons, this fugue is untied. Ancient composers, in order to find with facility the proper answers in this kind of fugue, were in the habit of making use of two diatonic scales of eight notes each, the one in descending, the other in ascending, by means of which the answers could not fail to be in contrary motion. This may be viewed in these two examples:

Scales in Contrary Motion.



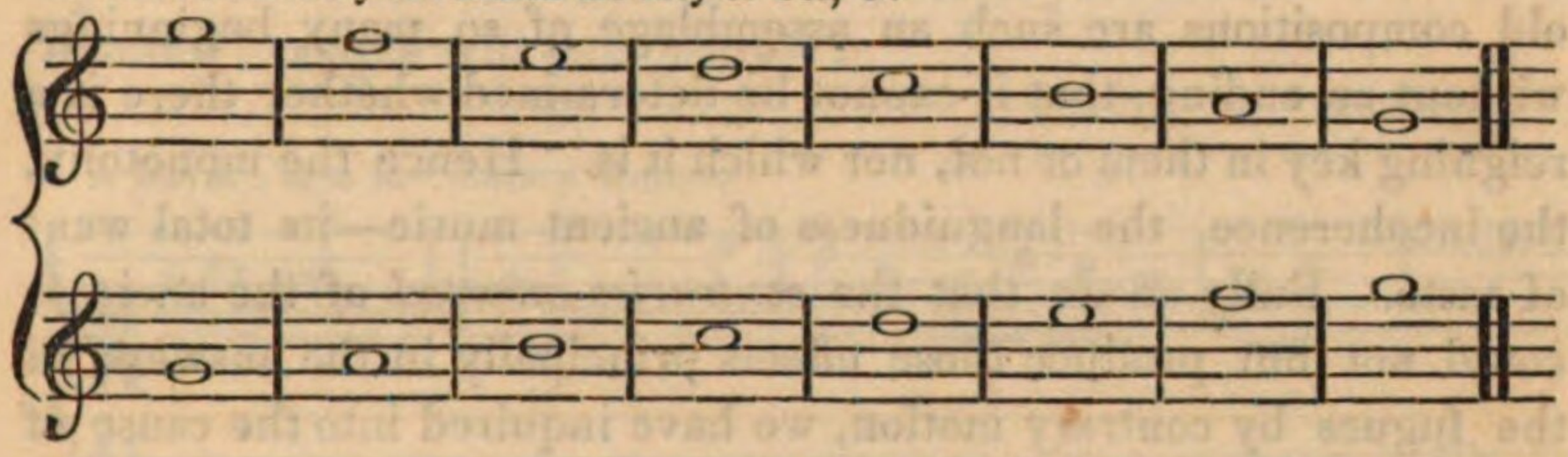
A Fugue in Contrary Motion.



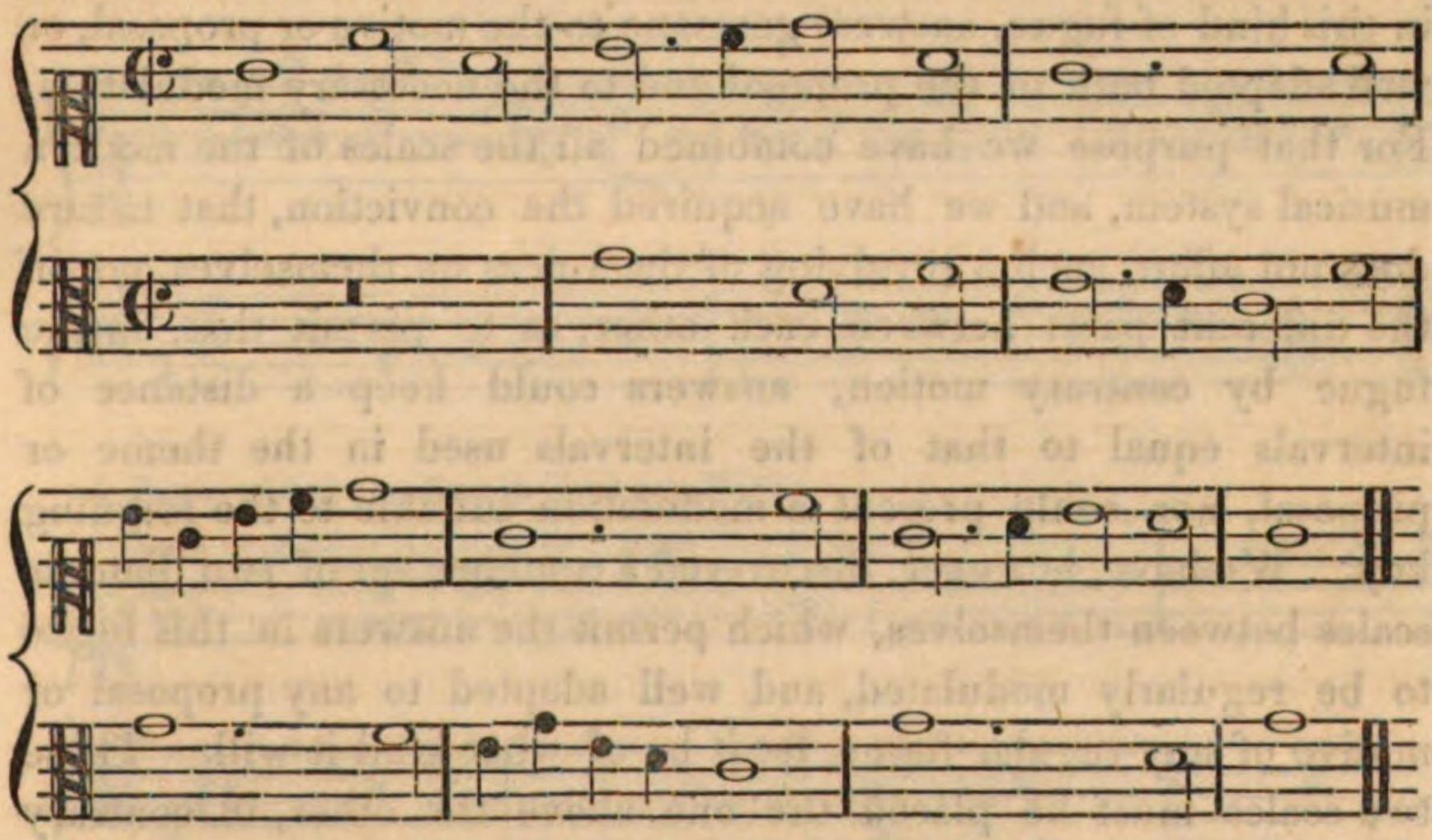
The inferior scale, the ascendant one, used to contain the theme or proposal; the superior scale, the descendant one, the answer. From the respective position of these two scales, which are between themselves in contrary motion, arose the name of this kind of fugue. We deem it indispensable to present our readers with the two above-quoted examples, written by J. M. Bononcini, of Modena, and the following fugue composed by Dionisio Bellente, of Verona. These two compositions will suffice to show how composers used formerly to employ two scales, named by them *contrary-inverted*. In Bononcini's fugue there are three faults: the first is in the answer, because this, being placed at the sixth of the reigning key, goes out of it, for which reason the reply is not adequate to the intent or

proposal; the second consists in the *contrary* inverted scales of the key of *Re* having been employed to answer to a proposal or motive uttered in the key of *Do;* the third fault results from the imperfection of the said scales, which are destitute of every one of the accidents belonging to them; accordingly they should be natural, sharp, or flat, major or minor. In Bellente's fugue, he answers to a theme or proposal made in the key of *Sol* with contraries inverted of the same key; for which reason the answer begins with the same note as the proposal, as may be seen in the two ensuing examples.

Scales in Contrary Motion in the Key of Sol, G.



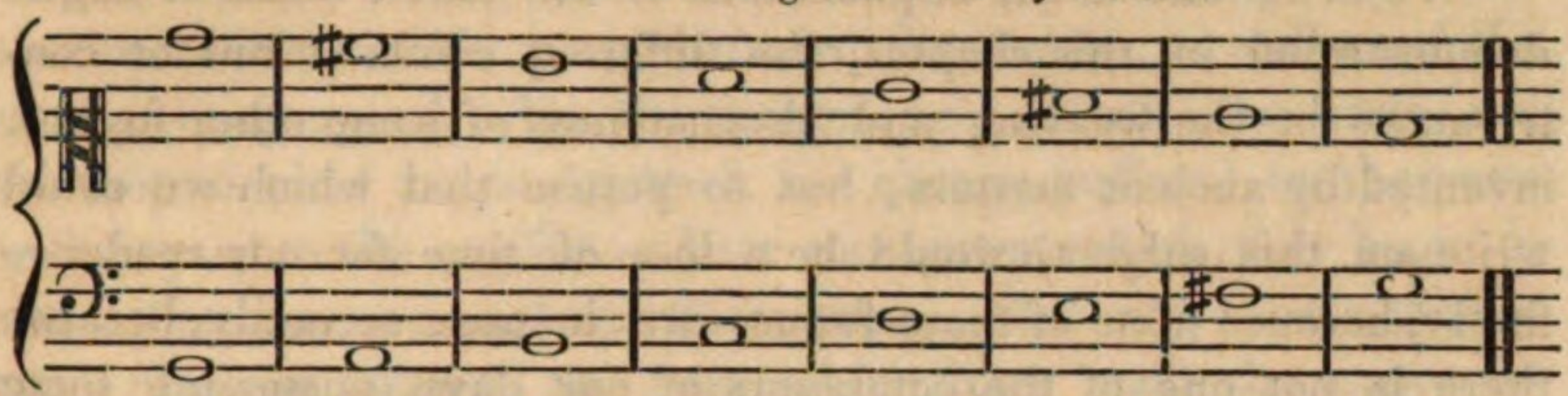
A Fugue in Contrary Motion.



Our reader, at the stage of knowledge which he has already reached, does not probably want our remarks to perceive two errors in this fugue; the one that the *Fa* is bereft of the sharp, without which the key of *Sol* is neither perfect nor even formed; the second, that the answer which begins with the tonic is not a true answer: it is, besides, destitute of the proper modulation; for, instead of modulating at the fifth, as it ought, it modulates at the fourth.

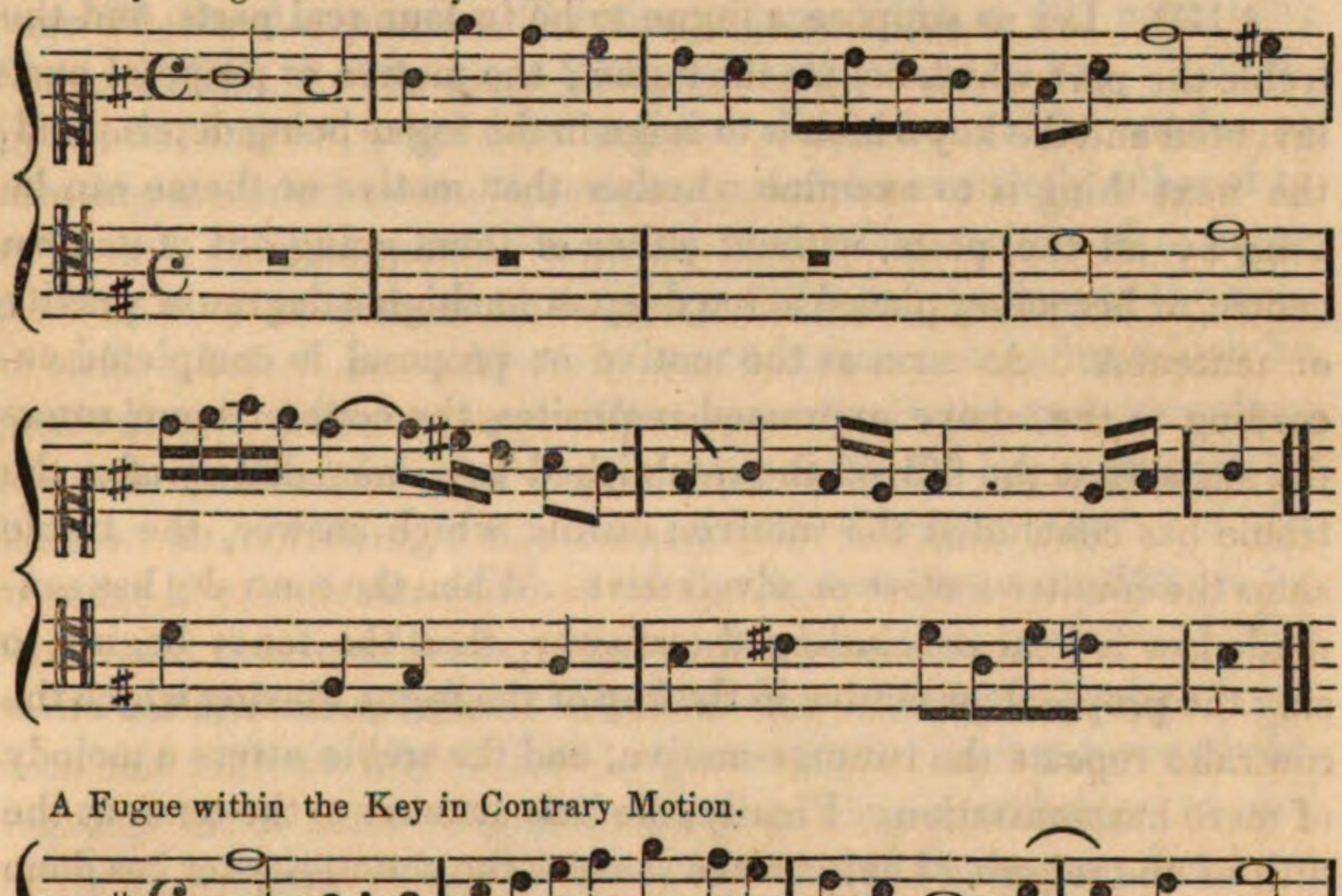
This was the way in which our ancestors composed music; and in their fugues, ingenious or witty as their motives might be, they used to make the answers at any interval whatever, and modulating at the sole guidance of their fancy. It is clear that they used to assimilate all musical compositions to their church or Facistol music; viz. writing in all diatonic scales without taking notice of the essential accidents proper to each of them. They often, indeed, carried the violation of the most indispensable rules so far as to use, in the precadencial chords, even in the last bar but one, the minor seventh instead of the major seventh; in other words, the minor or the false, instead of the neutral precadence. On this account, those old compositions are such an assemblage of so many beginnings without an ending, that it cannot be determined whether there is a reigning key in them or not, nor which it is. Hence the monotony, the incoherence, the languidness of ancient music—its total want of taste. Fully aware that the *contraries-inverted* of the ancients could not but produce those effects principally in the answers, in the fugues by contrary motion, we have inquired into the cause of such results arising from those contrary or inverted scales; and endeavoured to find out a rule, through which could be safely obtained, in this kind of fugue, answers germane to the motive or proposal, or well adapted both to the proposal and to the necessary modulation. For that purpose we have combined all the scales of the modern musical system, and we have acquired the conviction, that nature does not afford such a revolving of the voices on themselves, nor of the different parts between each other, as to permit that, in the fugue by contrary motion, answers could keep a distance of intervals equal to that of the intervals used in the theme or proposal, nor could present a modulation suitable to the reigning key. We have, however, discovered a combination of two diatonic scales between themselves, which permit the answers in this fugue to be regularly modulated, and well adapted to any proposal or motive of any regular fugue, let it be of what kind it will. These two scales must be placed the one above the other, in contrary motion, in the same way as ancient composers used to place their *contraries-inverted:* the inferior scale must be that of the reigning key, viz. that of the subject or antecedent, and it must be ascendant: the superior scale must be descendant, and in the key in which the answer or consequent is to be written, which is at the fifth of the tonic of the principal key of the fugue. This is exemplified in the following paradigm:

Scales to become Answers to the True Fugue in Contrary Motion.

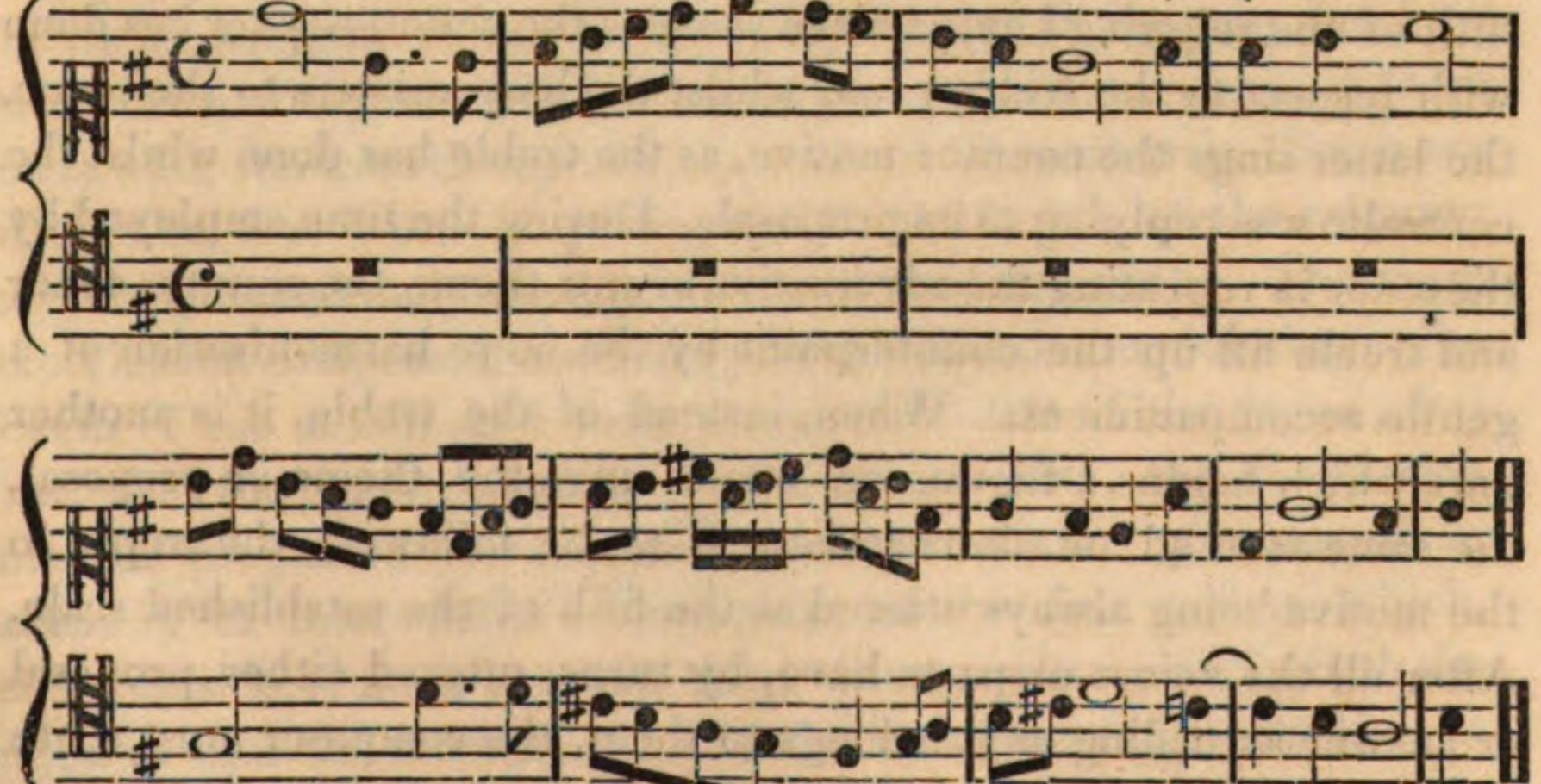


In order still more to add to the clearness of the above demonstration, we here subjoin the two fugues already given at the beginning of this paragraph; but now with their answers, obtained by means of the combination of the scales just alluded to; as the ensuing example will demonstrate:

A Royal Fugue in Contrary Motion.



A Fugue within the Key in Contrary Motion.



We could add to the explanations of the seven kinds of fugue demonstrated in this chapter, the different combinations or contrivances in the weaving and alternateness of some other fugues, invented by ancient masters; but to peruse that which we could write on this subject, would be a loss of time for our reader—firstly, because none of those fugues are in use; secondly, because there is not one of the composers of our days, possessing some degree of talent and intellect, who is not able himself to invent artifices or combinations of new fugues.

SECTION IV.

MARCH OR CONDUCT OF FUGUES.—CROSSING OF PARTS.

§ 130. Let us suppose a fugue to be in four real parts, and the treble the part which begins the fugue; the motive or proposal once invented and the key which is to reign in the fugue being determined, the next thing is to examine whether that motive or theme can be sung by all the parts, without either of them going out of its own centre, or becoming placed at too deep or too high a degree of gravity or acuteness. As soon as the motive or proposal is completed according to the above expressed requisites, the counter-tenor utters the answers at the fifth of the established key, immediately after the treble has concluded the motive; during which answer, the treble sings the counter-motive or adversative. When the contralto has concluded or is near concluding the answer, then the tenor begins to sing the proposal or motive in the key of the fugue, during which the contralto repeats the counter-motive, and the treble utters a melody of mere harmonization. Finally, the bass answers to the tenor at the fifth of the reigning key, just the same as the counter-tenor has done with respect to the treble; and whilst the bass answers to the tenor, the latter sings the counter-motive, as the treble has done whilst the contralto was replying to its proposal. During the time employed by the tenor in repeating the adversative or anti-theme, the counter-tenor and treble fill up the counterpoint by the mere harmonization of a gentle accompaniment. When, instead of the treble, it is another part which begins a fugue, viz. which sings the theme or proposal, the same method or alternateness is to be followed, the reply to the motive being always uttered at the fifth of the established scale. After all the voices or parts have, by turns, uttered either proposal or answer according as it belongs to them, the composer must write an accessory or intermingled counterpoint made by the four parts,

to prepare the ensuing modulation, which has inevitably to precede the interchange of the parts between themselves, as well as of the motive or proposal. By the interchange of both the parts and the motive must be understood, the change suffered by the parts with regard to the earlier or later moment at which they begin to sing either the proposal or the answer. That interchange chiefly takes place as follows: the parts which have made the answer at the fifth of the reigning key now sing the motive in that key; the parts which have proposed the theme or motive in the established scale, now sing the answer at the fifth of that same scale; whilst the parts which have uttered the anti-theme or adversative remain permanently doing the same, whichsoever they may be. Let our reader never lose sight of this leading axiom, viz. that in all kinds of fugue the rules which we have exposed in *prolegomena*, § 72, page 88, in the present Treatise, Chap. VIII, § 40, page 135; Chap. XXII, § 76, page 203, and following; Chap. XXIX, §§ 97, 98, and 99, page 248 and following; as to the modes of effecting modulations and transitions, must be as strictly adhered to as in the plainest sort of counterpoint. The writer of a fugue must be very cautious as to the part of the bar, and as to the note he strikes, before he makes only a modulation; or after which he enters into a different key. Consequently, in the two operations just demonstrated, in order to announce either the beginning of the fugue or its interchange, it is necessary to cause the cadence of the reigning key, and the cadence of the scale built on its fifth, to be both heard occasionally, in order to get both keys well established in the ear; because, in the course and alternations of the fugue, the chant not unfrequently dallies long enough before it returns to the reigning key; since it has to execute the interchange of the theme or proposal in one of the scales relative to the reigning key. Masters do not agree with respect to the modulation which is to be made after the interchange of the motive or proposal. Some are of opinion that it is to be performed at the fourth of the reigning key, and, immediately after, at the third or at the sixth. The more experienced composers, however, pretend that the modulation at the fourth of the established scale must be the last of the fugue; but that, after the interchange of the different parts, the modulation must be conducted to the third or to the sixth, by means of an accessory or intercalated counterpoint of the four voices, which, in that new key, must between them all utter alternatively both the proposal and the answer, and also the cadence of the new key, as before stated. This being done, the four parts will make a short

accessory or uniting counterpoint, for the purpose of modulating to the fourth of the established scale ; in which new key they must again repeat the subject, and the reply in the manner above indicated. As the last part that answers to the subject is in the reigning key, it is obvious that no modulation is necessary to begin the epilogue of the fugue. The composer therefore must continue in the principal key of the fugue, through a short accessory or intercalated counterpoint, which he will write on purpose to introduce the epilogue or final attacks. Some authors, before they begin the epilogue, are in the habit of suspending the whole harmonization at the fifth above the tonic of the fugue ; or of executing that suspension of the reigning key on any dissonance, by means of an organ point, a short roulade, or a cadenza ; but other composers, with whom we side, deem it preferable to plainly enter into the epilogue with such a suspension of the established scale, or such a pause or cadenza. We think it, nevertheless, advisable, before commencing the epilogue, to attract the hearer's attention by some impressive chords, in order to make it more conspicuous, as it is undoubtedly one of the principal and most difficult parts in the fugue. Before we proceed further, let us say what it is: the epilogue is the final part of any fugue, for after it there can be no more than one or two bars, the object of which is to lead to the final cadence, or to prepare a pedal at the fifth, which pedal necessarily resolves into the final cadence.

The epilogue is in reality an abridged repetition of the fugue itself; because in it (the epilogue) the different parts must answer to the motive or proposal, in the same way that it has been practised in the fugue : only the different answers to the subject, as well as the repetitions of the same, must be heard at much shorter intervals. If those intervals have been of three bars, and they never can be of more than four, they must not in the epilogue be of more than half a bar.

The epilogue is therefore like a remote echo, humming the whole fugue, and seeming to say to all : " before you go, I will take good care that you shall not forget me."

Before the composer of a fugue determines upon its motive or proposal, he must ascertain the possibility of its being repeated by both grave and acute parts ; the facility of its being repeated in other keys; and, finally, the facility of shortly passing to them through modulation. He must ascertain also whether or not it can be easily imitated by the middle or interior parts. The epilogue must preserve identity as much as possible with the subject or proposal ; and were the composer led to the necessity of altering that identity,

he could not do it but slightly, and in the interior parts, the treble and the bass being so perceptible that the least alteration of the proposal could not be suffered in them.

When, after the epilogue, the composer introduces a pedal, by means of the preparation above explained, it is usual to place it at the bass, though there is no prohibition to have it uttered by any other part. All of them, indeed, can successively sustain it, forming with it a lovely chain, in which, whilst one part stops on the pedal, the others may modulate upon it, by means of an imitation either of the motive or counter-motive.

It is obvious to our readers, that, in order to shorten or to lengthen a fugue, nothing is to be done but to diminish or increase from half a bar to three, seldom to four, the measures sung by the different parts between the proposal and the answer, and to diminish and to increase the length of the accessory, intermingled, or intercalated melodies or chants, which are used to tie to each other, as before stated, the various strains, passages, or divisions of a whole fugue. Of course, when you wish to shorten the fugue, modulation at the third or at the sixth are not to be thought of, and, reciprocally, may be lavished, if the writer of a fugue wants to extend it.

Simple as may be the accompaniment made by the other parts to those which are singing the proposal or the answer, these parts, which have to fill up the counterpoint or the harmonization, must endeavour to form between themselves a sort of dialogue, or to be wrestling together; for when it is so, the fugue is more attractive, more ingenious, and more impressive.

§ 131. The parts are said to cross themselves, when an upper or more acute part descends more than the lower or graver part next to it, or when that graver or lower part ascends higher than the upper or more acute part which is immediately above it. The crossing of parts is not a defect, at least a want of regularity, unless it has to be unavoidably resorted to, to afford such or such a part the means of answering the proposal, or of effecting the imitation of the same. However, by attentively considering the crossing of parts, we can hardly look upon it as a real fault; because, when the tenor goes down to the strings or sounds proper to the bass, and, vice versâ, when the bass ascends to the strings or sounds of the tenor clef, the irregularity goes no further than the performer's eyes, because the harmony does not cease a moment to remain in its own centre. We have seen, in a quartet composed by Luti, a crossing of parts between the bass and tenor, which had not less than eleven notes following each other; and as we cannot refrain from ac-

knowledging that crossings of parts of three or four notes are used by all composers, we are rationally led to infer—first, that the crossing of parts to be performed by human voices is permitted, when used with discretion: secondly, that it is a defect merely of place and not of harmonization; and thirdly, that, with regard to instruments, and principally between violins and hautboys, it may be freely employed as often as it is convenient to the arrangements contemplated by the composer.

PART II.

THE THEORETICAL AND CONFIRMATORY TREATISE.

CHAPTER I.

OF THE THREE CHARACTERS INHERENT TO ANY PIECE OF MUSIC.

§ 1. The study of the foregoing *Elements*, *Prolegomena*, and *Practical Treatise*, has undoubtedly bestowed on our reader all the knowledge that is requisite to write, with the greatest correctness, any composition whatever, either of sacred, dramatic, symphonic, or fugued music; or of the lighter kinds, as songs, romances, ballads, waltzes, French quadrilles and galopades, mazurkas, promenades, and polkas; as well as of another description, in which but few have yet exercised themselves, viz. the chorographic kind; as ballets, fandangos, seguidillas, boleros, minuets, Scotch dances, and other characteristic dances, both national and foreign. He knows all the rules necessary to compose for a grand orchestra—all that can be composed; and the Chap. III, IV, V, XXI, XXII, XXIX, and XXX, of the Practical Treatise, have even revealed to him the fundamental causes and origin of the principal rules. Our reader, we say, if he knows well all that he has perused from the beginning to the present page of this volume, is thoroughly acquainted with all the rules, both essential and accessory: and if, from a musical student, he wishes to become no more than an able and well-informed amateur, he surely knows enough; but if he wishes to become a professional composer, or a master, he must read, study, and meditate upon the whole of this second Treatise, which we have more

specially written for masters, and for those who, merely proficient in harmony, counterpoint, and composition, are desirous of attaining the summit of the musical science. In this second part, all the causes of rules and effects not explained in the first, nor indeed in any work hitherto published, will be disclosed; all the secrets of the art will be revealed. The most important questions, either totally forgotten to this day, or treated by a hundred learned didactic writers in as many points of view, all different, and most of them in contradiction to each other, are going to be, we hope at least, definitively settled by the voices of nature and truth, which never cease so perfectly to harmonize together, as to make them but one and the same voice.

Thus the unity or singleness of the diatonic genus; the polytonism of chords; the general use of the melo-harmonic typometer as a universal compendium, mould, and pattern of all musical operations; the melo-harmonic properties of the *third;* the threefold nature of the dominant, or rather the functions of the three dominants; the accordance of the sonorous with the rhythmical potency; the alterations of the transcadence; the nature and the union of tonism and modism; and several other matters; shall be elucidated in a manner as novel as it is unexceptionable. We could consider the universality and the infallibility of the Geneuphonic principle as sufficiently proved already, by the many examples, taken from the most celebrated compositions, which we have, in the Practical Treatise, brought as undeniable proofs of the Geneuphonic rules, gradually as we were giving them; and indeed there is not one correct piece of music known in Europe that does not bear witness to the luminousness and sufficiency of the Geneuphonic theory; but we have deemed it advantageous to pupils, to amateurs, and to masters themselves, to enrich the work by presenting to them, in this second part, several extracts from various popular works of the greatest composers, so precious, so fruitful, so curious of themselves, whilst they are so irrefragably comprobatory of the new doctrine, that they will not permit even an enemy to the Geneuphonic system (if any one be found so zealous or so blind as to be so) to open his lips against it. Then will master-pieces of Haydn, of Catel, of Mozart, of Albrechtsberger, Morigi, Carnicer, Reicha, Richter, Rossini, Kromer, unravel all the characters and features of modulation and transition; the whole mechanism of melody and harmony; all the mysteries of fugues and canons of every kind: whilst others will supply our readers with instructive paradigms and perfect models of the most admired and hitherto most difficult counter-

points, all the intricacies of which, henceforth seen through a powerful magnifying glass, are now rendered both clear and straight.

§ 2. Music has three characters, or three inherent qualities; viz. the tonic, the modic, and the rhythmic character. As all that is erroneous in music is the invention of some composer or other, it may very probably have been a musician who first dared to call music the *chirp of birds*, which has neither *scale*, *mode*, nor *rhythm;* for which reason it cannot be noted. Our reader has perhaps remarked that a bird which is taught a musical phrase forgets or leaves it off for natural singing. It would be as easy to make a young child a singer before he is able to speak, and to make him forget the inarticulate cry of pain by repeating to him the phrase (intoned by the vowel *A*), *Do*, *Re*, *Mi*, &c. consoling him only when he also shall have repeated it.

Since those three characters of music exist only in the diatonic kind, how and under what title could the two other pretended genera be admitted into the composition of melody? It is, then, an error to say, as it is repeated in all systems, that the diatonic kind is a compound of three kinds. On the contrary, it is *simple*, *independent*, and *universal*—in short, the only one existing. The faculty it has of taking for *tonics* whatever *sound* it chooses of *all the sounds*, is a *power*, not a *result;* a free election, but not an *obligatory adoption:* it is a *voluntary occupation*, and not a *forced acceptance*. Where it reigns, there is itself only—i.e. musical order; where it is not, there are only *cacophony*, *unharmony*, *chromatism*, or musical disorder.

The diatonic kind, being then the only producer of the agreeableness of melody, is the only one to be used for composition, which is no more than the choice and arrangement of sounds on the three laws of *Key*, *Mode*, and *Rhythm*.

When the composer uses those sounds called *enharmonic* or *chromatic*, he only employs them as diatonic sounds of a different scale; because, as diatonic, they are foreign to the established key. This is so clear and so notorious a fact, that we deem it quite unnecessary to confirm it by examples Every one knows that where a *natural*, a *flat*, or a *sharp* is applied to a rhythmic sound—viz. to a note in an accented part of time,—the key is changed. This is a sufficient proof*.

It being so, it is evident that every dissonant chord is nothing

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* See Chap. V, Elem. § 45, Rule III, page 40.

else than the collision, concurrence, or simultaneousness of sounds belonging to more than one diatonic gamut, or, in other terms, to more than one key. As often, however, as it is not merely dissonant through the generative and precadencial second, 4 and 5 of the reigning scale, such state of the sonorousness is an eclipse; it is, if we may use this comparison, a *tonic eclipse*, occasioned by the clashing of the two gamuts, by the interposition or passage of a sound between another sound and the hearer's ear, which perceives them altered or incomplete during their conjunction. That eclipse, or meeting of two tonogamic potencies, ceases at the very moment of the resolution, which, by means of the motion of one of the two sounds, or of both, unveiling or clearing the eclipsed one, restores its purity and brightness to the consonance in the new key (or sign of the musical zodiac), into which the melody enters through the precadence or the cadence. To this theory we shall return in a further chapter, in which we shall explain the origin of consonance and dissonance.

CHAPTER II.

OF THE APOCRYPHAL ORIGIN OF THE DIATONIC GAMUT.

§ 3. The musical system which has been founded on the *resonance of sonorous bodies* is false, precisely on account of the insufficiency of such a foundation.

Rameau, finding (after the Rev. Father Mersenne and M. Sauveur) an harmonical fact in the *resonance*, hastened to say that harmony was the first element of music; which would be the same as saying that rhyme was the element of poetry.

This first false consequence of a very true fact put him out of the right way; and it is for that reason that his system is *so incomplete in its unfoldings*, that the Conservatory of Paris has acknowledged it to be so. (See the Introduction to this work.) We add, that nobody will ever complete its development. But Rameau,

although proceeding erroneously like his predecessors, was nevertheless more fortunate than they. He raised his fine system of the fundamental bass; an incomplete system, as every thing is that is not true, though useful in practice (a better not existing); as was the natural strength of the eye, before the invention of the telescope.

The inventor of the system of fundamental bass, thinking that it was derived from a true axiom, says: "Since *harmony* is the "the first musical fact, *melody* is produced by it." As soon as he dared to utter such an assertion, he was going astray; and the unfoldings of his system became, and will remain for ever, incomplete.

He began by establishing the origin or genealogy of the gamut; and, like a self-interested genealogist, he drew the best he could, from the royal stem of Harmony. After him, D'Alembert, one of the most learned philosophers and mathematicians of his age, knew better how to express that fictitious pedigree, by drawing it from the three triads or chords called *magistral, plagal,* and *authentic;* in other words, from the three perfect chords, *Do, Fa, Sol.*

Sol♮ 5	Do 1	Re 2
Mi♮ 3	La♮ 6	Si 7
Do♮ 1	Fa♮ 4	Sol♮ 5
Magistral.	Plagal.	Authentic.

After composing these three groups, each formed of a *generator* and two *generated,* he afterwards breaks them, to place the *eight* sounds of each gamut in their *diatonic* order, or scale of the major mode: *Do* 1, *Re* 2, *Mi* 3, *Fa* 4, *Sol* 5, *La* 6, *Si* 7, *Do* 8ve. This operation, and the reasoning which dictates it, are exactly the same reasoning and the same operation as would be made by one who would dare to say that that incontestable fact, the *Creation,* had for its immediate cause or origin these parts of the animal, vegetable, and mineral kingdoms: *cat—tea—iron:* because in those words are contained all the letters of the word CREATION: and because, in order to form it, there is nothing more to do than to place them in the order required by the spelling of that word. Indeed, the same as the resonantists, to form their scale, leave out once the notes *Do,* 4 of *Sol,* and *Sol,* 5 of *Do,* the madman just alluded to leaves out once from his three primitive words the duplicate letters *a t,* 4th and 5th letters of the word which he wants to make up. Similarly, who can say that, because the *magistral,* the *plagal,* and the *authentic* cadences include the same sounds of the gamut (two of which are

duplicated, the *Sol* and the *Do*), these three chords dictate and require the order in which they are placed by this primitive melody, by this innate musical phrase, this universal rhythm of both time and sound, and *euphonic* sonorousness? The law, and the spring of all others, a law of which we might say as Tully said of justice—*non scripta, sed nata lex quam non didiscimus;* in one word, is the gamut *Do, Re, Mi, Fa, Sol, La, Si, Do.* No doubt those seven sounds are found in the three perfect chords of *Do, Fa,* and *Sol;* but, to constitute them into one phrase, we must—

1st. Take them from their natural state of *resonance.*

2ndly. Isolate and articulate them as *mono-sounds,* equal to their generator.

3rdly. Forget, or even dissemble, that each of those seven sounds has its own special resonances, all of which are cacophonies with the *Do* intended to be made generator of the entire gamut.

4thly. Reduce to a single octave all the resonances which, in reality, nature never gives in a smaller space than two octaves.

5thly. Adopt the same fiction for the purpose of creating a theory of the graphic or written bass, and also of the manner, still very vague and complicated, of numbering it.

6thly. Voluntarily shut our own eyes on those solid arguments with which mathematicians have proved that the intervals are not identical in all scales.

7thly. Tacitly admit or suppose a generation anterior to the gamut, given and acknowledged both as primitive and individual in itself.

And after all, even were it true, and could be proved, that *harmony* can produce *melody,* what have we acquired? Why a theory which is thoroughly incomplete; to the learning of which there is no end; and which can never begin to be useful till after several years of study, and, above all, of practice, in which it is soon forgotten; as it must at every step be submitted to the decision of the ear, to which it is very often contrary.

It is, we repeat, to endeavour to make poets by the theory of rhymes.

§ 4. In brief, we are not going to reveal the origin of the gamut: we know it no more than the resonantists: simple as it may be, we must confess it, without falling into the contradiction of acting as if we knew it; and this is all that is to be expected from us.

The gamut is the primitive melody; that is, the first musical

fact of nature. Without harmony, there may be chant or melody: without the gamut, they cannot be produced: the scale or gamut rules every modulation and transition from one key to another. The ear is never misled in music. According to the testimony of the ear, the primitive melody, or the gamut, can be agreeably accompanied by other melodies, formed with sounds of the same gamut differently ordered. Harmony is, therefore, the multiplicity of pre-existing melody; and the gamut, the element of harmony. We consent to uphold this known truth as a simple hypothesis. And is not the *melo-harmonic* generation by resonance another hypothesis? And what has it produced? An art of which as much could be said, as of that of medicine; viz. that life is too short to learn it: whilst our hypothesis presents the means of completely acquiring this art in a few months.

We shall not further extend this chapter, the object of which is to establish *the falsity of the generation of the gamut by the fact known under the name of resonance*, and the impossibility of attributing to it any other origin than the free and all-powerful will of Him who also created the other sensations, as *smell*, *savour*, *sleep*, *force*, *gravity*, and so many others, of which, happily for us, we shall never know any other principle.

CHAPTER III.

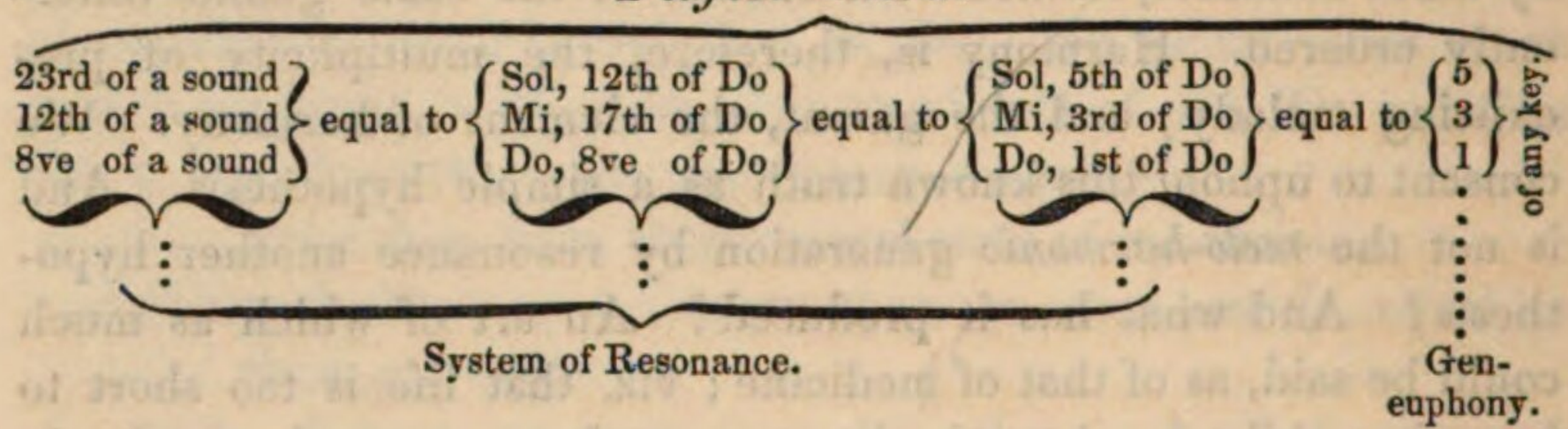
OF THE HARMONIC IDENTITY OF THE OCTAVE; OR, EQUISONANCE OF OCTAVISM.

§ 5. Every octave is either the grave or the acute octave of any *sound* whatever; it is, for harmony, the same as the sound of which it is the *octave* or *unison*.

This fact, known by all amateurs, is, nevertheless, denied by certain theorists; who, fortunately for us, are the same who teach that there are *diminished octaves and augmented ones*. It would then follow that there would be *diminished or augmented unisons*, or else, using this expression, *dissound* unisons, which is enough for our answer.

As to the *harmonic identity* of the *octave* with the *denominating sound*, and with the *unison*, here is the proof; and we give it in such a manner that the partizans of the system of ~~dis~~sonance will not be able to deny it:

Perfect Chord.



Observations.—These four ways of expressing the perfect chord are all conformable with each other, and with the practical doctrine by which all the great men of the art have formed themselves; according to which they have written the classical works which have made their names immortal. They have all considered the 12th as 5th, the 17th as 3rd; viz. the former one octave lower than its denominator, *Sol*, and the latter two octaves lower than its denominator, *Mi*. The theory and the cyphering of the bass, approved by the ear, are also entirely conformable; which would not be the case, if the interval called an *octave* were not, for *harmony*, the same as *sound* and *unison*. In fact, the same fiction is resorted to as in the bass, which is cyphered an octave higher than it is played. It is useless to add any thing to this simple demonstration, which answers to so many printed pages.

CHAPTER IV.

OF THE POLYTONISM OF CHORDS.

§ 6. Every chord is *polytonic*, that is to say, composed of as many *tonics* as it contains *sounds*.

This truth is so evident, so simple of itself, that it may pass without proof; since nobody can deny that every sound is note 1

(first or tonic) of a diatonic gamut, in such a degree of gravity or acuteness as may be wished it should sing. But how many consequences can we derive from it! We shall try to present a few of them, and we shall do so in the form of an answer to an observation with which a learned friend attempted to attack our hypothesis.

Critical Observation.—If every chord is the simultaneity of several tonics, and if every tonic has with it a *gamut, every chord* is a simultaneousness of several gamuts. Now the simultaneousness of several gamuts is a horrible *cacophony:* every chord is therefore cacophony; there is then no *euphonic* or *consonant* chord.

Answer.—The first and shortest answer to this argument would be to repeat the proposition. Every sound is a tonic; every chord is a simultaneousness of *sounds;* therefore every chord is a simultaneousness of tonics. But our aim is not sarcasm: it is conviction. Our remarks, therefore, will be confined to the natural inference to be drawn from these considerations—that there are some tonics which are consonant, and others which are dissonant, with respect to each other. If we be asked to assign the cause of this diversity, we willingly acknowledge that it is wholly unknown to us, and we believe to every body; as no one can refrain from admitting that he is wholly unable to explain the mystery; since it is universally allowed that resonance is productive of both dissonances and consonances; and that calculation which can determine the ratio or proportion of the different intervals, can never estimate the extent of the impressive effects they will excite, whether these effects be of an agreeable or of an unpleasant character.

We have before remarked, on this head, how ineffectual all the efforts of Euler were to throw any light on this subject. We shall now proceed to quote a few words from J. J. Rousseau, which contain all that has been said by the learned on this matter. "The sonorous body, besides yielding the principal sound, and those which compose, with it, the heptachord, produces also an endless number of others, formed by all the aliquots of the sonorous body, which sounds form no part of the perfect chord." Why are the first consonant sounds and the latter not expressed, when they are all produced by the same hand of Nature? To this question no reply has ever been made. Our new theory will go much further than any other in the solution of this difficulty; since it will trace the cause of musical order and disorder, that is, of euphony and cacophony, and make them dependent on the observance or infraction of a single law. This law is *the interval of the minor third.* Let us imagine an unlimited succession of minor thirds without interruption: this

is the euphonic law, or consonance. Place among them any tonics you choose, which interrupt the succession of minor thirds, and you have the infraction of the law, or dissonance.

Applying this principle to practice, in order to consult the comptroller, or, if we may be allowed so to express ourselves, the advanced sentinel of the law, the ear, we will commence the series of minor thirds, since we may commence at any point we choose, by *Fa natural*, which is the lowest note on the piano, and we shall touch *Fa*, *Lab*, *Dob*, *Re*, *Fa*, *Lab*, *Si*, *Re*, *Fa*, *Lab*.

You will never end doing the same thing as long as you avoid introducing a dissonance through the medium of augmentation, or by the diminution of the interval of a *minor third*. As soon as you alter this interval, you will have, not only one dissonance, but two at the same time, which are inseparable—that of *second* and that of *major third*. Here we have destruction and reproduction simultaneously effected: this is the *precadence*, or the only medium or channel for the transition of melody. Here we have the first *major third* presented by nature, and presented not as a *modic third* (since the scale which it produces is not that of its lowest note, but that of an absent sound distant from it by 7 semitones), but as the simple means of a *precadencial transition* which leads the melody to a new cadence, whether it be pure, or precadencially altered. This is the only movement of which melody consists, as it has been repeatedly explained in the prolegomena and the Practical Treatise.

It follows then that there are four tonics, which, being reciprocally placed in intervals of *simple minor thirds* and of *double minor thirds* (or tritone), contribute by their tonic presence and their modic character to the constitution of the primitive chord, the basis of the euphonic consonance which consists of the simultaneous multiplicity of *tonism* and *modism;* a multiplicity which comprises in itself the whole conceivable extent of sonorousness, whether grave, middle, or acute. As soon as these four tonics (1, 3, 5, 1 octave) are found together, their satellites, the sounds 2, 4, 5, 6, and 7 (all precadencial), are null and void; they are eclipsed, as far as regards the ear; they are the stars behind the sun. This sun can be seen in all the degrees of ascension or ascent, and declension or descent; all that is necessary, is to observe it from the lowest to the highest. But as soon as it is stained or altered by a *dissimilar* interval, it at once disappears, and is succeeded by that momentary disorder called dissonance, synonymous with precadence, as cadence is synonymous with consonance.

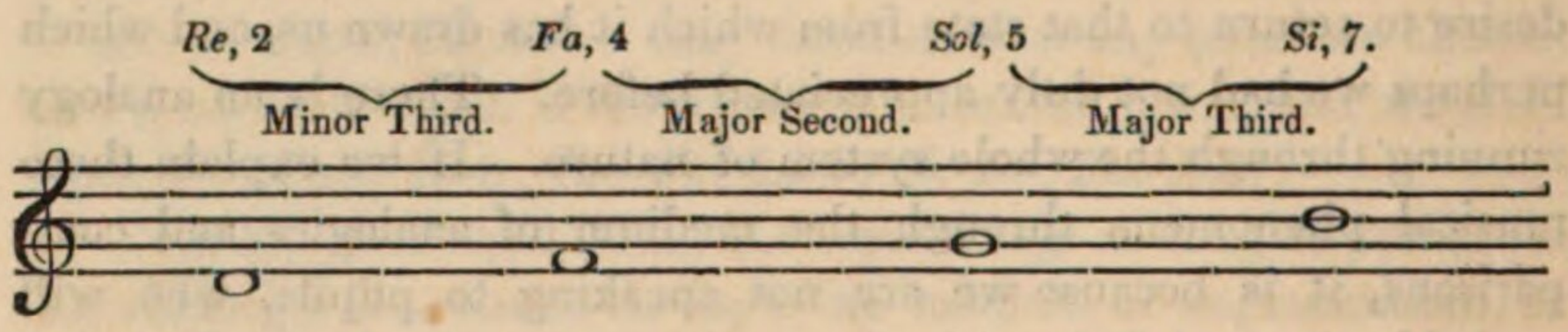
Now, disorder in music, as in every thing else, is always offensive,

and always more perceptible than order. Storm is noticed quicker than fine weather, and illness more so than good health. You are unconscious of the pangs of suffering when you are in the enjoyment of perfect health; you heed not the absence of suffering, but you are sensibly alive to the slightest bodily pain. No sooner are our ears assailed by the slightest dissonance, than we feel a desire to return to that state from which it has drawn us, and which perhaps we had not duly appreciated before. There is an analogy running through the whole system of nature. If we explain these musical phenomena through the medium of analogies and comparisons, it is because we are not speaking to pupils, who will probably be satisfied with the positive results which they will obtain through the study of the Practical Treatise. We are here addressing ourselves to masters of harmony and learned theorists, to whom we shall first offer facts, and then our hypothesis, which will afford a full explanation of them. We have, we think so at least, proved that every consonant chord is polytonic and minor modic, and consequently cadencial. We are now going to point out that every dissonant chord is polytonic and immodic or neutral, and, on this very account, *precadencial.*

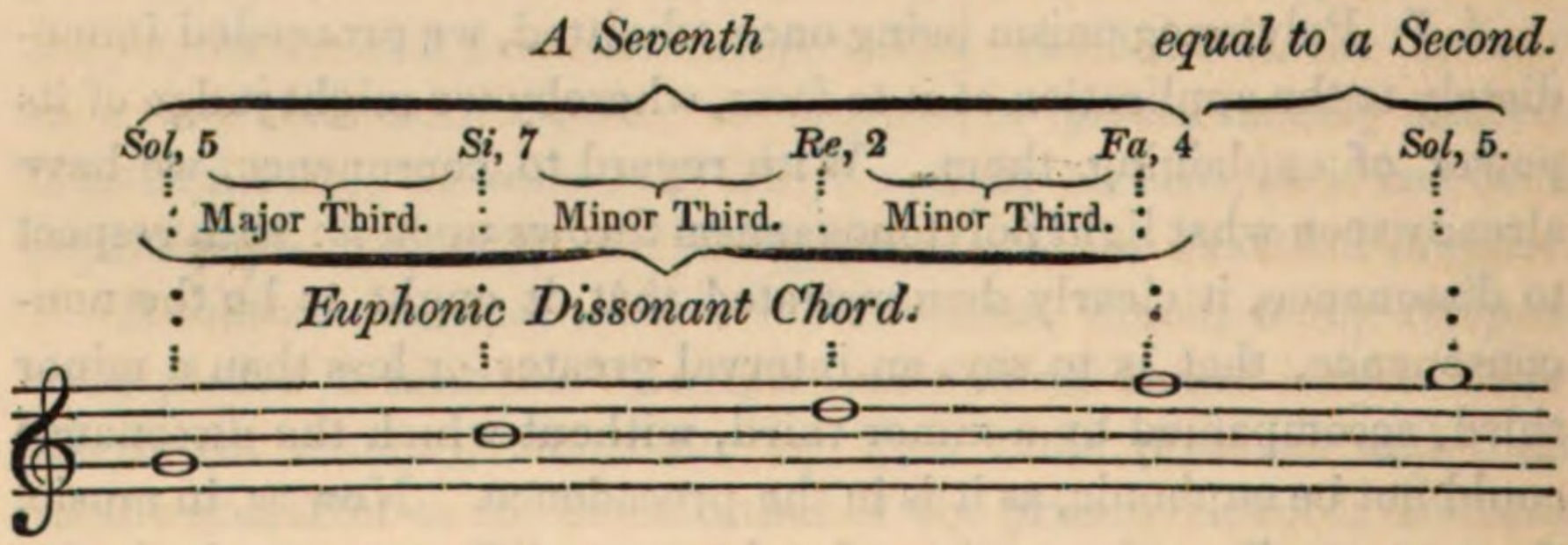
§ 7. Polytonogamism being once admitted, we proceeded immediately to the application of it to facts, whereby we might judge of its power of explaining them. With regard to consonance, we have already seen what light polytonogamism throws upon it: with respect to dissonance, it clearly demonstrated that it ought to be the non-consonance, that is to say, an interval greater or less than a minor third, accompanied by a minor third, without which the dissonance could not be euphonic, as it is in the precadence. Now as, in music, the tono-modic scale consists of only seven different sounds, it was evidently necessary, to find the dissonance, that an alteration should be effected in the consonant chord, which, as before stated, consists of three minor thirds. We therefore began by trying this alteration, and we found it, by substituting in the place of one of the sounds of the consonance of three minor thirds (or harmonic root) a sound lower by a semitone than the one taken away. Upon the completion of this operation, we saw that this alteration gave at once two intervals which we could not but consider as dissonant, because they were not minor thirds, viz. the interval of *second* and that of major third.

But we then had no doubt that this alteration produced a change in the *key;* which was opposed to our object: and as, in order that there might be a rest in or an end to the melody, the unity of scale is indispensable, we saw that the dissonance which ought to bring

about this rest should necessarily be found in the same scale as the consonance. Then we endeavoured to compose a chord of a minor third, a second and a major third, all formed with the sounds of the same scale, grounded on the tonic we had chosen. Let us suppose it to be the scale of *Do;* we then found the following sonorousness.



Our ear approved of this sonorousness, although opposed to consonance; we asked ourselves the reason, and we found that our fundamental axiom explained it. This axiom is that of the identity of the octave and mono-sound. In point of fact, the inversion of this chord produces the sonorousness of three *thirds*, one of which is major and two minor. This very inversion led us to observe that a *second* is equal to a seventh, and vice versâ.



And thus we discover how and for what reason this chord is a dissonant sonorousness, and nevertheless an euphonic one, the only one that has two sounds which, being at an interval of second between themselves, the *Fa* 4 and the *Sol* 5, are at the same time at an interval of third, with some sound of the harmonic root; the *Fa* 4 with the *Re* 2, and the *Sol* 5 with the *Si* 7: and, on this account, this chord participates of the other quality inherent to consonance, viz. that of producing a rest to the melody, but still not a final close, by reason of its consonance or euphony not being a final one.

This being so far ascertained, and, before proceeding to collate with this operation the other destructions of the harmonic root which we have seen, in §§ from 99, p. 254, to §§ 107, p. 279, Chapters XXIX and XXX, of the Practical Treatise, we could

not but fall into the following dilemma; since this chord is not in itself a tonic one, as being incapable of bestowing an absolute rest, since the tonic sound of the gamut to which it belongs is *Do*, and since this same chord may be grounded on the note *Do* without borrowing any sound from the triad (*Do, Mi, Sol,* = 1, 3, 5) of the major mode, it is evident that the triad of the major mode of *Do* $\left\{\begin{matrix} Sol \\ Mi \\ Do \end{matrix}\right\}$ is to the triad of *Fa* $\left\{\begin{matrix} Do \\ La \\ Fa \end{matrix}\right\}$ what the triad of the major mode of *Sol* $\left\{\begin{matrix} Re \\ Si \\ Sol \end{matrix}\right\}$ is to the triad of *Do* $\left\{\begin{matrix} Sol \\ Mi \\ Do \end{matrix}\right\}$ whence it results, that the triad of the major mode of a scale or key is an incomplete dissonant chord, which leads the melody or chant to another scale or key, four degrees higher; as from *Sol* to *Do;* from *Do* to *Fa;* from *Fa* to *Si* flat; from *Si* flat to *Mi* flat, &c.; and that those triads, in order to become complete and euphonic dissonances, must attach to themselves the only sound of the scale towards which they are going, which is not one of the sounds of their own scale. And thus we see that, to render the triad, *Sol, Si, Re,* a complete precadence, in other words, a dissonant chord, it is necessary to add to it the only sound of the scale of *Do* which is not common to the scale of *Sol,* that is to say, the *Fa* natural. And, in like manner, in order that the triad, *Do, Mi, Sol,* may become a complete precadence of the key of *Fa,* it is requisite to add to it the only sound of the scale of *Fa* which is not common to the scale of *Do,* that is to say, the *Si* flat. Following the same analogy, the triad of *Fa* adds to its note the *Mi* flat of the scale of *Si* flat. The old school gave the name of avoided cadences (see § 39, Chapter VIII, pages 134 and 135, of the Practical Treatise) to that succession of scales rising from fourth to fourth; and it did so indeed very properly, but without having ever known the true reason of the propriety of such a denomination. We have just demonstrated it. This is the proper place to refute the reproach once made to the Geneuphonic Theory, on account of its having given the name of *cadence* to the consonance hitherto called the *perfect chord.* The reproach was so couched: "*Cadence is the falling movement from one chord to another; but it is not the chord itself.*" Geneuphony answers: In what you name an *avoided cadence,* what do you avoid, if not a perfect chord? You, old school, attribute, as well as Geneuphony does, the name of cadence to the perfect chord, which is what you avoid; for, indeed,

the falling movement you avoid not. Guided by nature and its simple and only principle, Geneuphony has termed *precadence* the sonorousness which always and indispensably must immediately precede the perfect chord or the *cadence*. With such an alteration in the denomination of the only two chords given by nature to the charming and universal language called music, all in its march has become and remains clear, uniform, infallible, and no less sure than simple, for the practice of the art.

In the operation of avoiding cadences, the clashing, the conjunction, or simultaneousness of tonics, is therefore approved of by nature, whenever there is neither more nor less than the interval of a minor third between them; but that clashing or conjunction is condemned, or rather it destroys the reigning scale, the moment they advance or retreat ever so little.

The result of this destruction is the production of a new key, with the six other sounds of its gamut, its satellites; and as neither of its modic sounds (the 3 and the 6) occurs in the dissonant chord or precadence of the scale, it is clear that the precadence is devoid of a modic character, and serves indifferently for both modes. It is on this account that we have named it *neutral;* it is the subject of a special article. In the present chapter, which draws to its end we flatter ourselves that we have clearly proved:

1st.—The polytonism of every dissonant chord, and generally of all chords.

2ndly.—The quality inherent to every dissonant chord of being precadencial, or the immediate precursor of the consonance or absolute rest.

3rdly.—The want of special modism essential to every dissonant chord; or rather their faculty of being common to the two modes.

4thly.—The striking, novel, and important fact, that every dissonant chord exclusively belongs to the scale or key indicated, we may say even clearly and unerringly named, by the second, which such dissonant chord contains, since that second always consists of numbers 4 and 5 of the said scale.

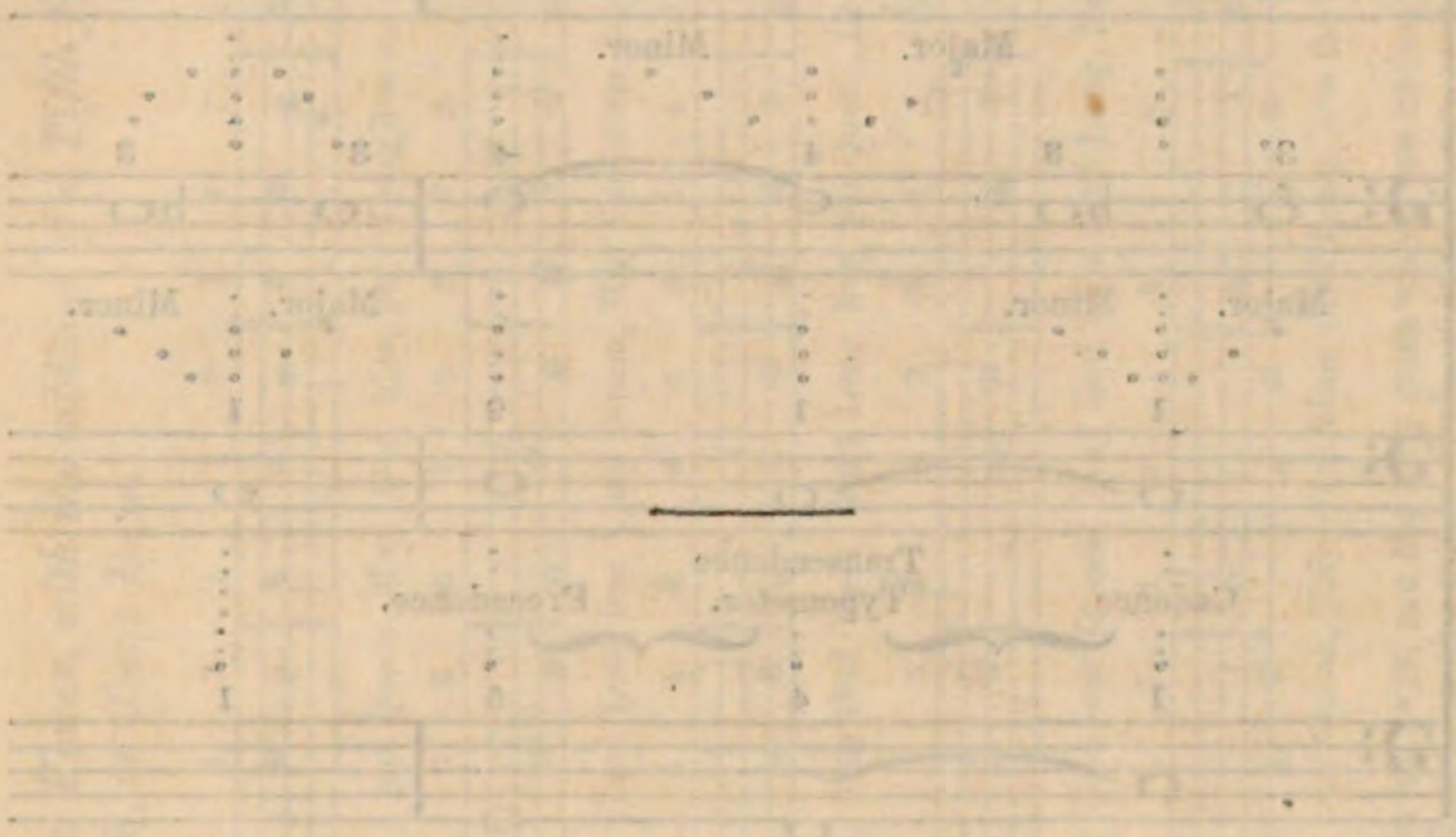
5thly.—The immediate cause of the union or incorporation of the gamut and the mode with *Tonism*, viz. with the nature of the key.

6thly.—The principle or origin of both consonance and dissonance.

7thly.—The twofoldness of character of the cadence of the major mode, which is at once cadence of its own scale and in-

complete but sufficient precadence of the key, built on the note 4 of its own gamut.

8thly.—Finally, the origin or derivation of the typometric or thorough, or tonic bass (hitherto, but often erroneously, called fundamental) of the three chords of every scale (viz. the *magistral*, now cadence; the *plagal*, now transcadence; the *authentic*, now precadence); which, though forming intrinsic parts of one and the same key, are in reality belonging essentially to three distinct gamuts.



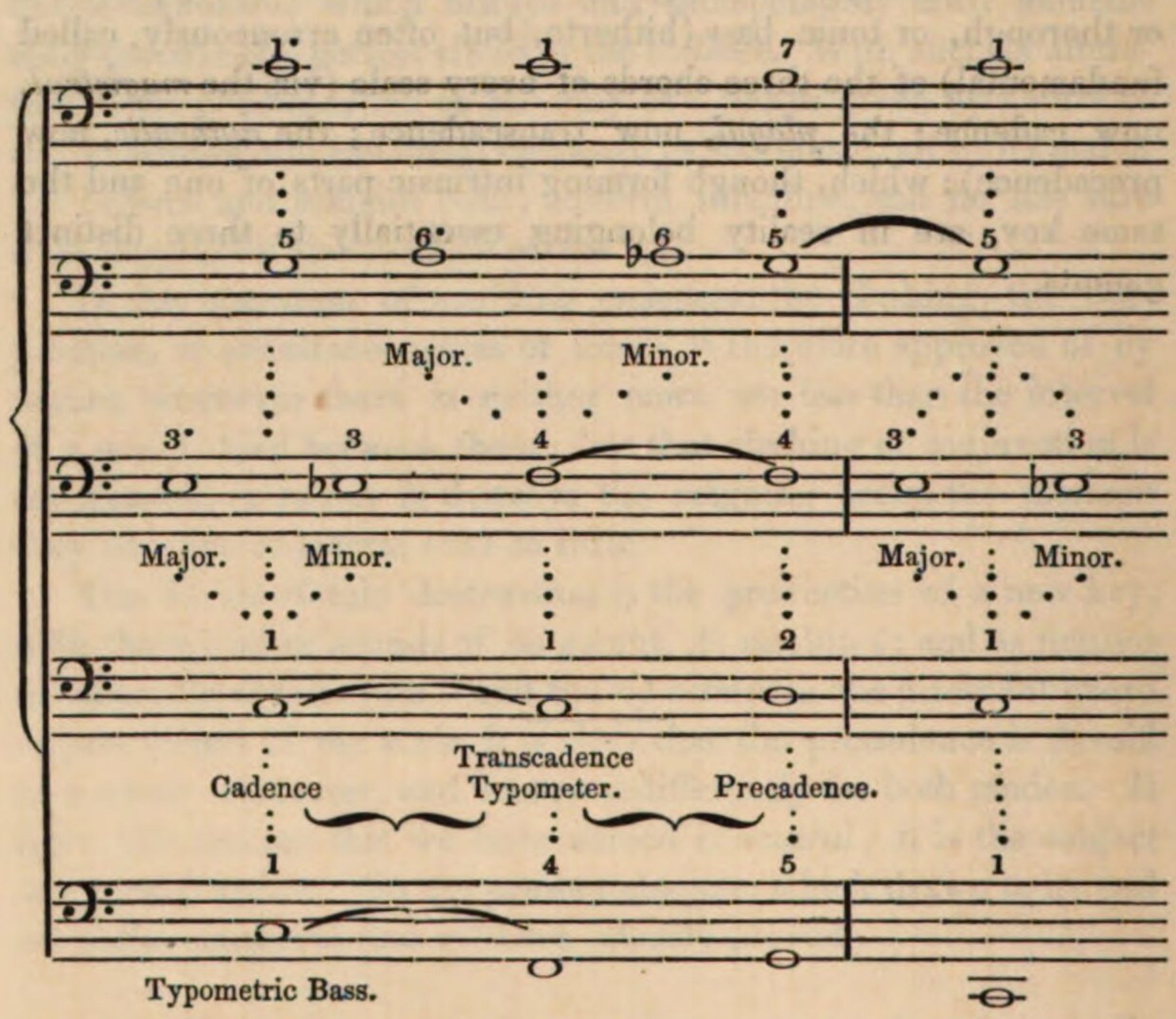
CHAPTER V.

EXPLANATION OF THE MELO-HARMONIC TYPOMETER.

§ 8. We give this name to a single formula, or invariable process which nature employs for musical motion, denominated *melody*, if simple; harmony, if multiple.

It is composed of the seven sounds of the diatonic scale, together with the octave of the tonic, which we have distributed, as may be seen in the practical treatise, Chap. V, pages 110 and 111. We solicit a particular attention to the motion of each of the four melodies of which harmony is composed.

The Melo-harmonic Typometer.



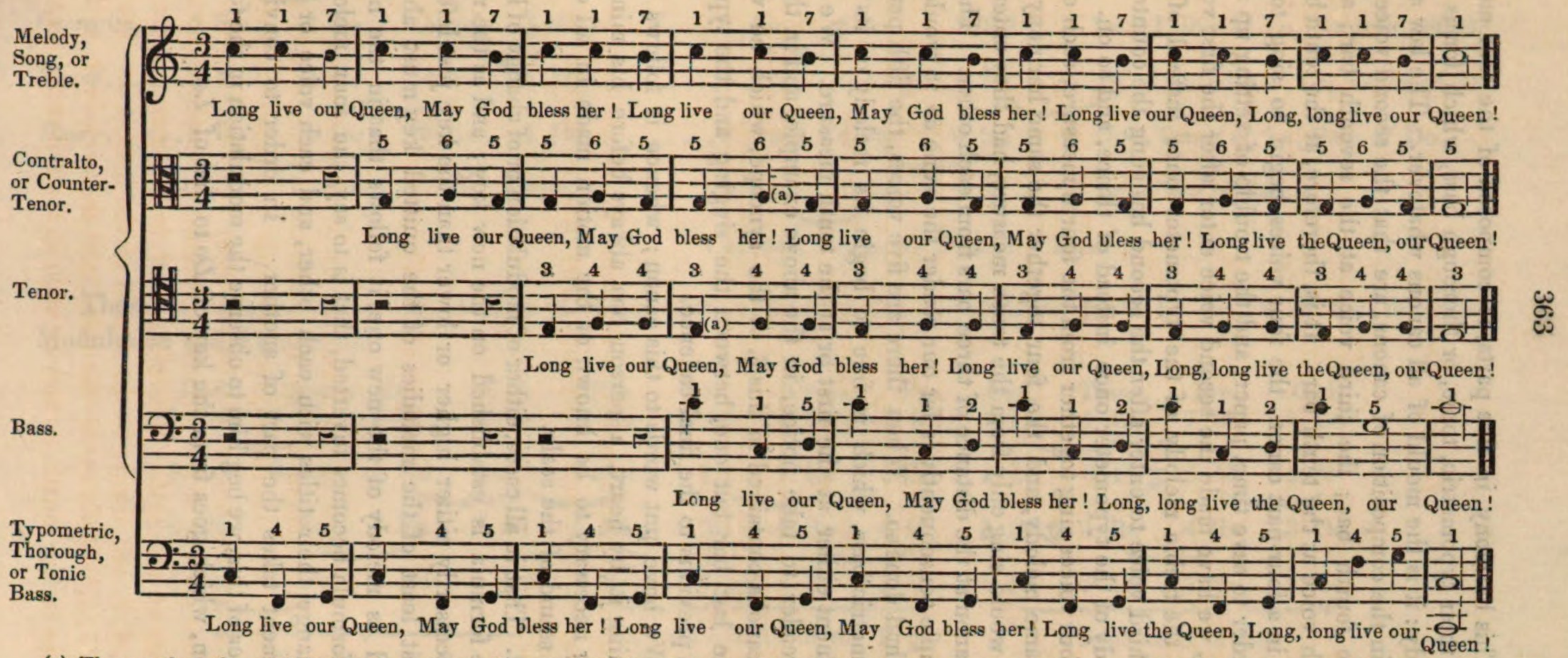
In this formula, which is the same for all the keys of the two modes, is contained everything that can be known of musical composition.

Analysis of the Typometer.

The first view of this formula clearly demonstrates:

1. That each of the four melodies has its invariable progression, whatever may be the octave in which you place the melody. 1, 1, 2, 1 (in the key of *Do*, for instance, *Do*, *Do*, *Re*, *Do*), will be the first melody of the harmony, because it employs the two first *sounds* of the *scale*. Therefore, and in like manner, the melody 3, 4, 4, 3, will always be the second of the harmony. The melody 5, 6, 5, 5, will always be the third, and the melody 1, 1, 7, 1, will always be the fourth, as may be seen in the following canon.

The Melo-harmonic Typometer in Canon for Four Voices, with the addition of a Fifth for the Typometric, Thorough, or Tonic Bass.



(a) The numbers 3 and 6, being the only modic *sounds* of the scale in all keys, are the only ones which can undergo an alteration without change of key: and so, in order to sing the typometer, and particularly this Canon, in the minor mode, it is necessary to flatten the 3 and the 6.

This harmony, in five parts, is composed of the four melodies, with their typometric, tonic, or thorough bass, which forms a fifth melody: it is the mould of all canons whatever. The law and the use, in the composition of canons, are that the second voice begins at the fourth bar; the third voice at the seventh bar; and the fourth voice at the tenth bar. It is, therefore, at the tenth bar only that, in a four-part canon, the four voices begin to sing together. In order to save time, paper, and the trouble of setting up another table, we have made the second voice enter after the first voice has sung the treble melody of the typometer once instead of thrice, the third voice to enter after the second has sung the counter-tenor melody of the typometer once instead of thrice, and so on. Thus the four voices sing together from the fourth measure, each of them the same melody, and the four together the same harmony, which they would sing only from the tenth measure, had they entered into the canon at the distance of three bars from each other. The above example consequently is for our reader the same as it would be if they had done so. When there are five voices, the fifth part is the typometric bass, which is free to begin its melody or its accompaniment either at the first or at the tenth measure. We request the reader to take notice, in the above example, and in the other two canons contained in this §, of the syncope, which he will find in the last bar but one, between the singing and the typometric bass, previous to the final cadence.

We have put words to this canon; whence it follows that, in learning it by heart, a person has always before his mind every thing necessary to be known of the motion made in all cases by each sound of the scale.

2. That in all cases, either of modulation or of change of key, this same formula is established on the new key; and as the new key is necessarily either higher or lower than the key just left, and as one at least of the melodies of the quitted key must absolutely stand as melody of the new one, it follows that in the new key, the formula becomes inverted, that is to say, the four melodies all exchange their titles with each other, and each voice or each instrument takes the part of another. In order to convince the reader of this, we beg him to observe the modulation in the following canon, which goes from the key of *Do* to that of *La*.

Typometer of Do.

Treble.....	1 Do	1 Do	7 Si	1 Do	
Contralto....	5 Sol	6 La	5 Sol	5 Sol	
Tenor.....	3 Mi	4 Fa	4 Fa	3 Mi	
Bass.....	1 Do	1 Do	2 Re	1 Do	
	Cadence.	Transcad.	Precad.	Cadence.	

Typometer of La.

	1 La	1 La	7 Sol♯	1 La	Treble of La, Contralto of Do.
	5 Mi	6 Fa♯	5 Mi	5 Mi	Contralto of La, Tenor of Do.
	3 Do♯	4 Re	4 Re	3 Do	Tenor of La, Bass of Do.
	1 La	1 La	2 Si	1 La	Bass of La.
	Cadence.	Transcad.	Precad.	Cadence.	

These two Typometers are levelled or placed in continued succession in the same parts by means of the following Modulation and Transition.

Cad.	Trans.	Pre.	Cad.	Pre.	Cad.	Trans.	Pre.	Cad.	Trans.	Pre.	Cad.
1 Do	1 Do	7 Si	1 Do	4 Re	5 Mi	6 Fa♯	7 Sol♯	1 La	1 La	7 Sol	1 La
5 Sol	6 La	5 Sol	5 Sol	7 Sol♯	1 La	1 La	5 Mi	5 Mi	6 Fa♯	5 Mi	5 Mi
3 Mi	4 Fa	4 Fa	3 Mi	5 Mi	5 Mi	4 Re	4 Re	3 Do♯	4 Re	4 Re	3 Do
1 Do	1 Do	2 Re	1 Do	2 Si	3 Do♯	4 Re	2 Si	1 La	1 La	2 Si	1 La
Typometer of Do.				Inverted Chords of the Typometer of La to arrive at their Typometric order.				Typometer of La.			

The Melo-harmonic Typometer as a Canon for Five Voices, with Transition from the Key of Do natural Major to that of La natural Major.

Song, Melody, or Treble.

Cad. P.

Long live our Queen, May God bless her! Long live our Queen, May God bless her! Long live our Queen, May God bless her! Long live our beau - ti - ful Queen!

Contralto, or Counter-Tenor.

Long live our Queen, May God bless her! Long live our dear Queen, May God bless her! Long live our Queen, May God bless our pow - er - ful Queen!

Tenor.

Long live our Queen, May God bless her! Long live our Queen, May God bless her! Long live our Queen, Our most gracious Queen!

Bass.

Long live our Queen, May God bless her! Long live our Queen, May God ev - er bless our love - ly Queen!

Typometric, Thorough, or Tonic Bass.

Long live our Queen, May God bless her! Long live our Queen, May God bless her! Long live our Queen, May God bless her! Long live our mer-ci - ful Queen!

Another Example from the Key of Do natural Major to that of Fa natural of the same Mode.

Typometer of Do.

Treble.....1 Do 1 Do. 7 Si 1 Do

Contralto....5 Sol 6 La 5 Sol 5 Sol

Tenor.....3 Mi 4 Fa 4 Fa 3 Mi

Bass.....1 Do 1 Do 2 Re 3 Mi

Cadence. Transcad. Precad. Cadence.

Typometer of Fa.

1 Fa 1 Fa 7 Mi 1 Fa....Treble of Fa, Tenor of Do.

5 Do 6 Re 5 Do 5 Do ....Contralto of Fa, Bass of Do.

3 La 4 Si♭ 4 Si♭ 3 La ... Tenor.

1 Fa 1 Fa 2 Sol 1 Fa....Bass.

Cadence. Transcad. Precad. Cadence.

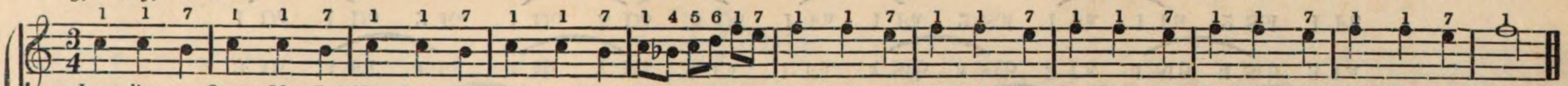
These Two Typometrics are levelled or placed in continued successsion in the same parts by means of the following Modulation and Transition.

Cad.	Transc.	Prec.	Cad.	Pre.	Cad.	Transc.	Transc.	Prec.	Cad.	Trans.	Pre.	Cad.
1 Do	1 Do	7 Si	1 Do	4 Si♭	5 Do	6 Re	1 Fa	7 Mi	1 Fa	1 Fa	7 Mi	1 Fa
5 Sol	6 La	5 Sol	5 Sol	2 Sol	3 La	4 Si♭	6 Re	5 Do	5 Do	6 Re	5 Do	5 Do
3 Mi	4 Fa	4 Fa	3 Mi	7 Mi	1 Fa	1 Fa	4 Si♭	4 Si♭	3 La	4 Si♭	4 Si♭	3 La
1 Do	1 Do	2 Re	1 Do	5 Do	5 Do	1 Fa	1 Fa	2 Sol	1 Fa	1 Fa	2 Sol	1 Fa

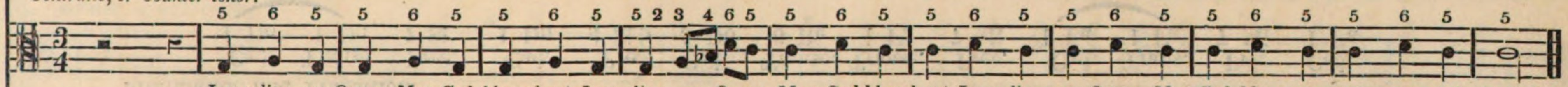
Typometer of Do. Inverted Chords of the Typometer of Fa to arrive at their Typometric order. Typometer of Fa.

The Melo-harmonic Typometer as a Canon for Four Voices, with a continued Typometric Bass; showing the Transition from the Key of Do natural major to that of Fa natural major.

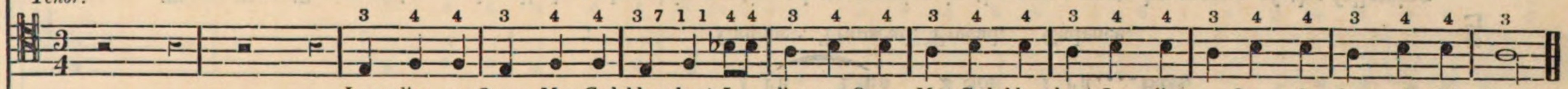
Song, Melody, or Treble.



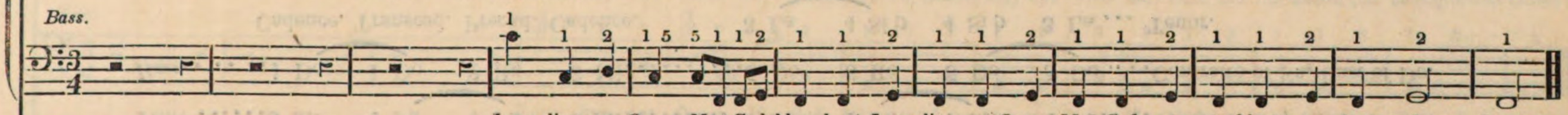
Contralto, or Counter-tenor.



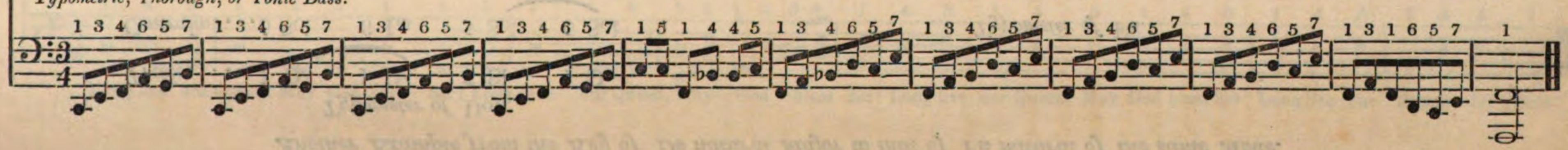
Tenor.



Bass.

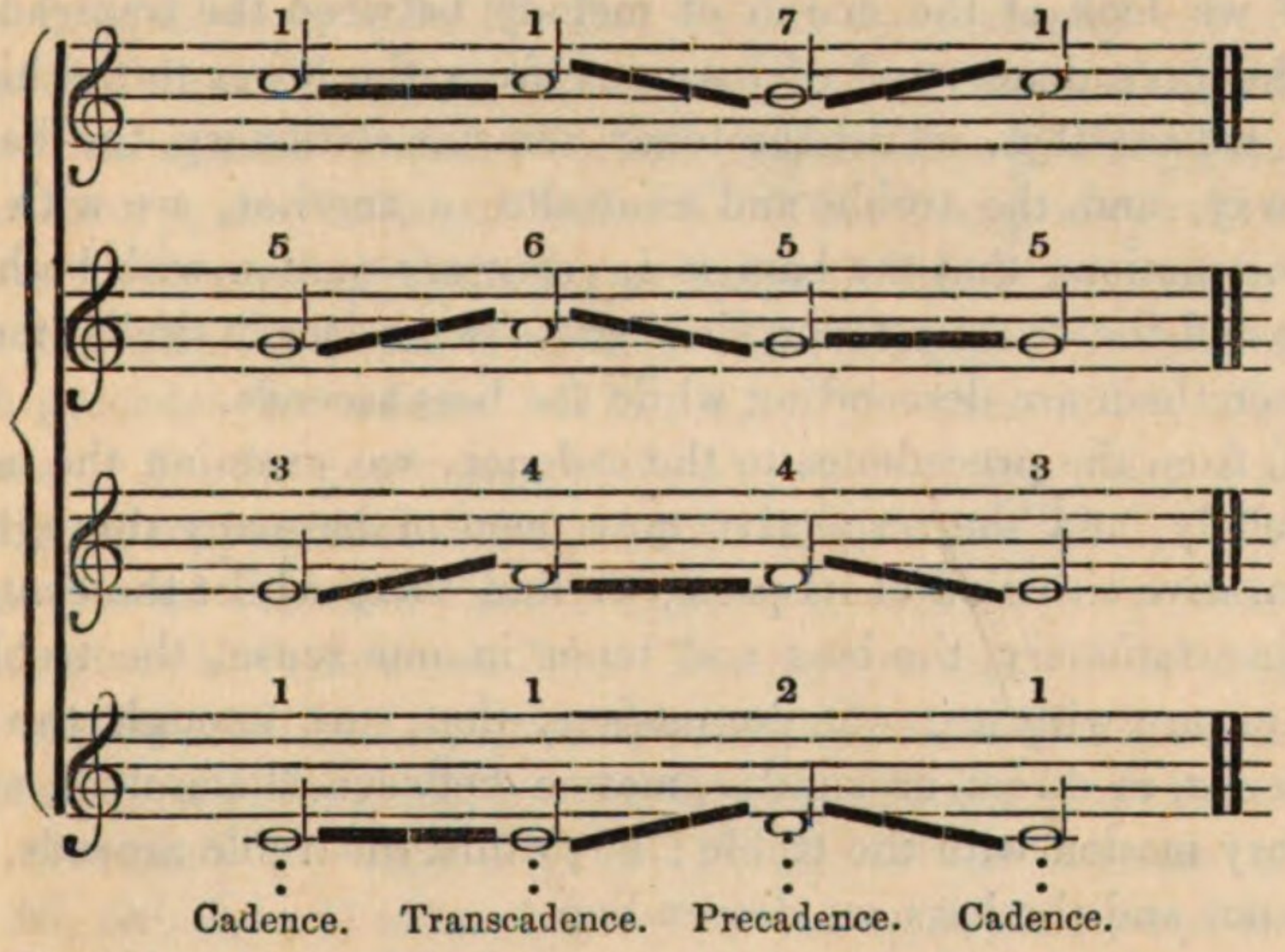


Typometric, Thorough, or Tonic Bass.



§ 9. 3. It is affirmed in all the theories that there are three symphonic motions—the *direct* or *similar*, the *contrary*, and the *oblique*. Of these three motions, now utterly useless, has been constructed a theory so dreadfully complicated, that it would be extremely difficult to learn by heart the rules which it lays down, but to which we cannot help, though with regret, paying a tribute of admiration, with regard to the classical work of *Fuchs*. For these motions, and the rules which branch from them, no reason whatever can be assigned, except the necessity (which, by the by, does not exist) of not articulating several fifths in succession. Now these motions, these rules, and the true cause of their existence up to the present time, are all established, demonstrated, and, moreover, practically taught, by our typometer.

A Typometer showing the different Motions:—the Prolongations, Retardations, Preparations, and Resolutions.



Let us further observe, in this last example, the motion of the four melodies.

Symphonic Motion of the Cadence to the Transcadence.

The first melody is with the second and third in oblique motion, and with the fourth in immobility or unison*.

The second melody is with the first and fourth in oblique motion, and with the third in direct motion. It may be observed here,

* Some theorists give to this immobility the name of *fourth motion!!*

that there can be no direct motion, except by a sequence or succession of thirds.

The third melody is with the first and the fourth in oblique motion; and with the second in direct motion for the first half, in oblique for the second.

Let the reader convince himself, by the observation of the typometer in a fresh point of view, that it is the true, the only type of good music, with respect to the motion of both melody and harmony, as well as to prolongations, or (what is nearly the same) to preparations, and with respect to retardations and resolutions.

If we look at the march of melody from the cadence to the transcadence, and at the march of harmony from the treble to the bass, we see that, whilst the treble and the bass remain stationary by a similar prolongation, both the tenor and the contralto are in oblique motion with regard to the bass and the treble, by means of a similar ascendant motion.

If we look at the march of melody between the transcadence and the precadence, and of harmony from the lower to the higher voice, we see that, whilst the tenor remains stationary, the bass in one way, and the treble and contralto in another, are with it in oblique motion; that the bass is in contrary motion with both the treble and the counter-tenor, since these two voices in similar motion between them are descending while the bass ascends.

If, from the precadence to the cadence, we examine the march of melody, and the respective movement of harmony through the comparative situation of its parts, we find that, whilst the contralto remains stationary, the bass and tenor in one sense, the treble in another, are with it in oblique motion; that, sure enough, the bass and tenor, in direct or similar motion between themselves, are in contrary motion with the treble; for, whilst the treble ascends, both the tenor and the bass are descending.

If we attend to the general motion of the harmony altogether, it soon strikes us that the stationary halts are placed in a successive ascent, like the steps of a staircase; for, between the first two chords, the halt is at the bass; between the two middle chords, it is at the tenor; and between the last two, it is at the contralto. We see that, in the first two chords, the interior parts ascend simultaneously, whilst the treble and the bass are motionless; that, in the two middle chords, the two upper parts are simultaneously descending, whilst the bass ascends and the tenor is motionless; and that, in the last two chords, the immobility belongs to the counter-tenor, whilst the simultaneous descent is effected by the two lower parts, the

treble ascending at the same time. In that simultaneousness and opposition, in that parallelism and succession of immobility or motion, consist the march, the working, the management of harmony, applicable to all kinds of musical composition.

4. This formula has, moreover, taught us the theory of preparations and resolutions. See the last example, and observe that the sound 1 (*Do*) in the cadence is a preparation (or, more properly speaking, anticipation) of the same sound (*Do*, 1) which occurs in the *transcadence*.

It is worthy of remark, in this example, that this operation is essentially the same as that called *syncope*, *binding* and *prolongation ;* moreover, that the transcadence is always composed of intervals of thirds, without any mixture of intervals of seconds: but this is the exclusive character of the sonorousness which we call cadence, and therefore the transcadence of one key is the cadence of another key. In fact, the set of sounds, 4, 6, 1 (*Fa*, *La*, *Do*), in the scale and key of *Do*, is equal to 1, 3, 5 (*Fa*, *La*, *Do*), in the scale and key of *Fa :* whence it follows that the preparation of *Do*, 1, from the cadence to the transcadence is what is called *preparation of the fifth*, and, in our theory, conversion of 1 into 5. This theory states that the cadence always springs from the precadence, which necessarily precedes it, either expressed or understood. Thus the cadence of *Do*, which precedes the cadence of *Fa*, is, at the same time, the precadence of *Fa*, the generation of the key of *Fa* being effected by the understood conjunction of the tonic *Si* flat with the tonic *Do*. Every conjunction of tonics, distant from one another by an interval of a second, gives birth to a new key. The gravest note of the conjunction becomes sound 4 ; the note the least grave becomes sound 5 ; the *Si* flat, 4, and the *Do* natural, 5, have the sound *Fa* natural as tonic or sound 1. This it is which causes the cadence of *Do* (*Do*, *Mi*, *Sol*, 1, 3, 5) to be the precadence, understood and incomplete, of *Fa* (*Do*, *Mi*, *Sol*, *Si* flat, 5, 7, 2, 4).

Hence it follows that the typometer of nature is essentially trinary ; that, since the transcadence of one key is the cadence of another, the typometer is always composed of two *cadences* and one *precadence ;* that, of these two cadences, the first, which is that of the tonic, is all-powerful over the ear, because it has its complete and articulated *precadence ;* whilst the other cadence, that of the 4, *Fa* (the transcadence), possesses much less influence over the ear, because the precadence is incomplete and understood.

5. The next thing to be observed is the preparation or connection that exists between the transcadence and the precadence. This

connection is kept by the prolongation of the sound 4. It is the presence of this same sound which completes the *tonic precadence.* Without this, the sonorousness 5, 7, 2 (*Sol, Si, Re*), being composed of thirds without mixture of seconds, would be, in its quality of cadence of the key of *Sol,* only the understood precadence of the key of *Do.* It would be exactly to the key of *Do,* what the cadence of *Do* is to the cadence of *Fa.* We are therefore justified in affirming that the precadencial conjunction 4 and 5 (*Fa* and *Sol*) is the only one capable of producing the *tonic cadence,* 1, 3, 5 (*Do, Mi, Sol.*)

6. Let us now turn to the connection of the *precadence* with the *cadence:* it consists of the prolongation of the sound 5; therefore the cadence has its *preparation of fifth* in the *precadence,* and consequently the *sound* 5 of *Do* is *sound* 1 of *Sol,* as the *sound* 5 of *Fa* is *sound* 1 of *Do.*

And now, behold! we have unravelled this great mystery, which the Greek theory, still barbarous, broached by Guido, and carried by his successors to the very acme of musical gallimaufry, have endeavoured, but without success, to explain in a satisfactory manner, either as to the principle or origin of melo-harmonic motion, or as to the march of melody and harmony.

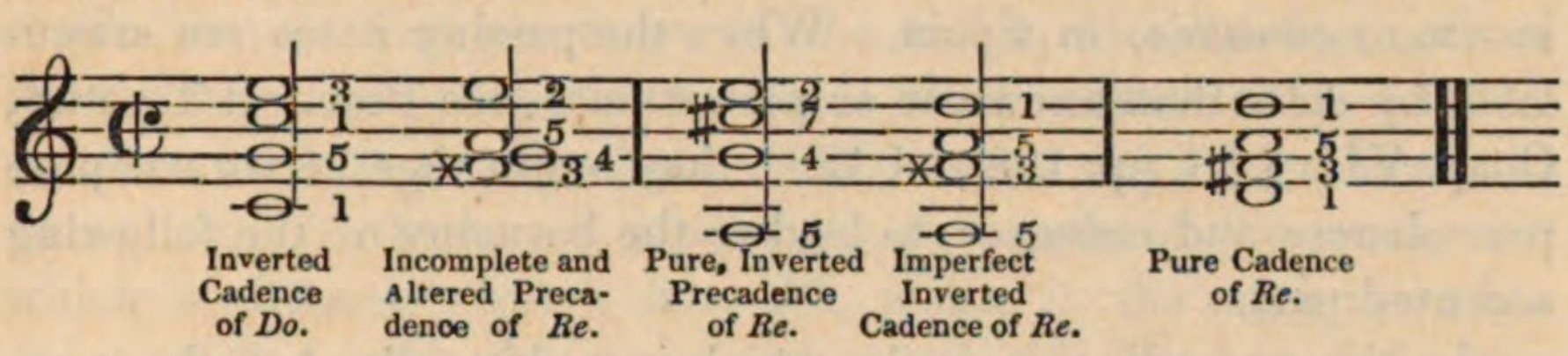
7. The typometer invariably indicates the progression which ought to be maintained by the melodies when they have to effect *resolutions.* If you retard the motion of one, two, or three melodies during the half of a bar, or of a *phrase of two bars,* it will make, at the end of the tune, the same motion which it would have done if it had not been retarded.

This is the true origin (hitherto unknown) of the vague rules laid down with respect to the resolutions which are to be made to ascend, and to those which ought to be made to descend; to those which ought to be made through the distance of a tone, or through that of a semitone; and with respect to those also which ought to be made by a leap of various degrees, such as that of the seventh on to the fifth (viz. of the leading or sensible on to the dominant). Further to elucidate this subject, a reference may be made to the following example, in which this reasoning will be found clearly demonstrated by means of the modulation from the key of *Do* to the key of *Re,* effected through a double retardation, that is to say, with a double dissonance.

Particular notice should be taken of the double retardation on the *Sol,* and on the *Mi,* the resolution of which on the *Fa* and on the *Re,* instead of occurring in the very next chord, is retarded until that which succeeds to this latter, because they are both pro-

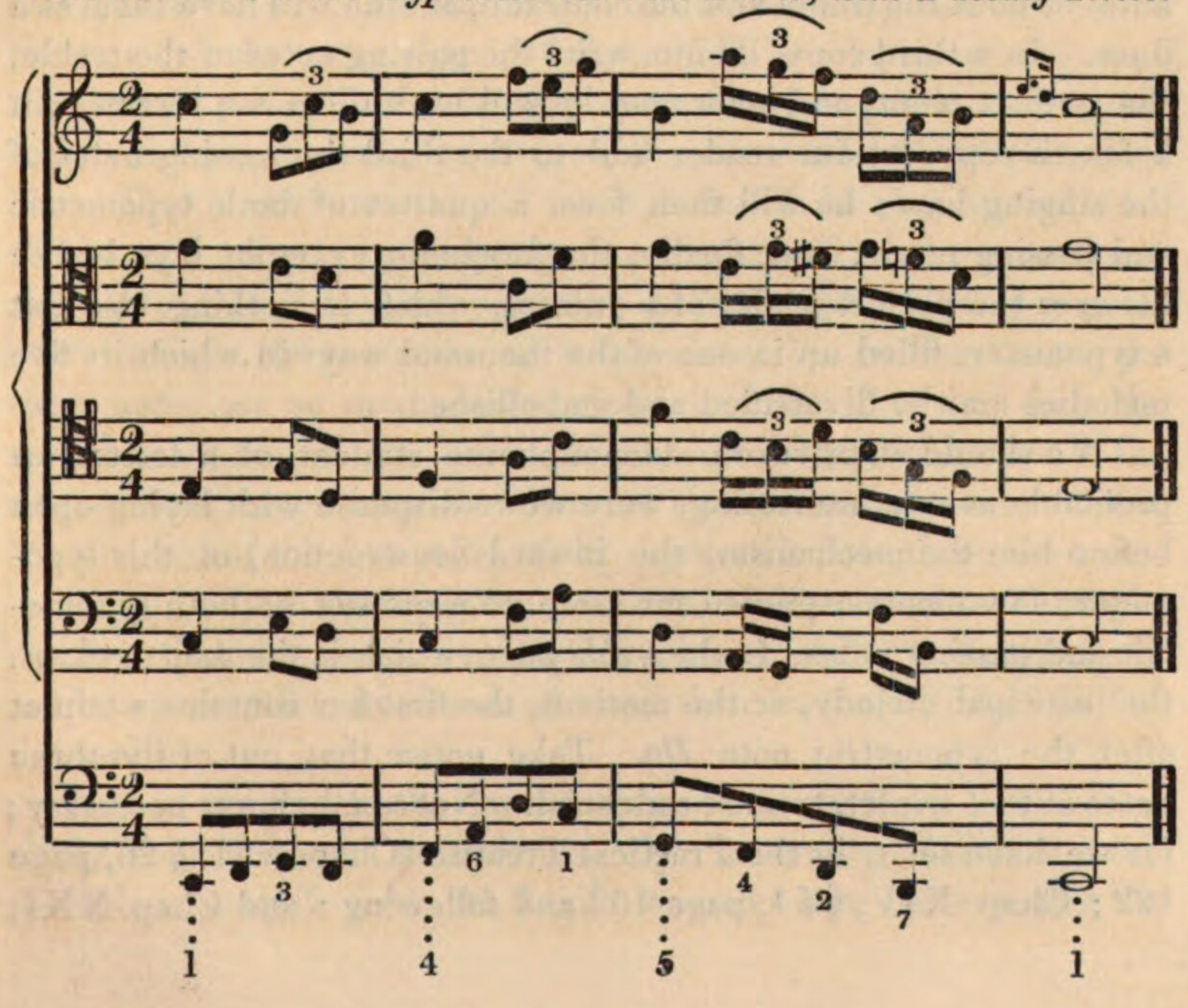
longed therein. This example clearly demonstrates that prolongation is the same operation as retardation. In fact, the prolongation of a sound retards its resolution or fall on the final or cadencial sound.

The asterisks seen at the *Fa*, in the second and the fourth chord, show, in the former, that it is cacophonic, as foreign to the precadence of *Re*, which it alters; in the latter, that it renders imperfect the cadence of *Re*, where it ought to be sharp, as it is in the next and last chord.



§ 10. This same formula gives the sure, sole, and perfect indication of the theory of passing notes: the examination of the naked typometer, as presented in § 8, page 369, will alone be sufficient to prove the fact; for, in reality, the second *Do*, both in the bass and the treble, the second *Fa* in the tenor, and the third *Sol* in the contralto, cannot be, as far as regards melody, considered otherwise than mere passing notes. Our reader will find a copious addition of passing notes in

The Melo-harmonic Typometer in Five Parts, with Passing Notes.



Every one knows that passing notes are not reckoned in harmony; that they are placed after, or immediately before, the harmonic note of each part of time; and that they fill up the duration of the part of time, less the harmonic movement. Nevertheless, passing notes are not foreign to the harmony, except when they are articulated by one only of the four or more parts, which is called, by antonomasia, the singing part or chant; *canto firmo*, in Italy; the same in Germany; *sujet* or *théme*, in France; and *motivo* or *canturia*, in Spain. When the passing notes are articulated by more than one voice or part at once (see Practical Treatise, Chap. VII, § 33, pp. 128 and 129), they ought together to compose precadences and cadences, to lead to the harmony of the following accented part.

In the preceding example, which is nothing else but the typometer of the key of *Do* natural major, in which passing notes have been placed after each harmonic note, all the passing notes that fill up the three intervals produced by the four chords are as a quartet or quintet. But let our reader take the trouble of writing this example four times; so that, in the first, he will only copy the passing notes of the treble part or melody; and then change, of course, into minims all the harmonic or typometric notes which are crotchets in the four lower parts. This first copy will present the passing notes as a solo. In a second copy, let our reader write the passing notes of both the treble and the contralto, and he will have them as a duet. In a third copy, let him write the passing notes of the treble, the counter-tenor, and tenor, and he will have them as a terzet. In a fourth copy, let our reader add to the third the passing notes of the singing bass; he will then form a quartet of both typometric and passing notes: and, finally, the foregoing example lays before his eyes the perfect model of a quintet, which is nothing else but a typometer, filled up in one of the thousand ways in which its five melodies may be diversified and embellished.

We should deprive our Geneuphonic student of a lesson, as profitable as it is interesting, were we to dispense with laying open before him the mechanism, the inward construction, of this typometer, now metamorphosed for him into a quintet of both typometric and passing notes. In the *treble part* (which is the *song* or *chant*, the principal melody, or the motive), the first bar contains a triplet after the typometric note *Do*. Take notice that, out of the three notes of that triplet, two are cadencial. Not so much was necessary; for we have seen, in the Practical Treatise (Chap. VII, § 26, page 122; Chap. XIV, § 54, page 162 and following; and Chap. XXI,

§ 71, page 198 and following), that it suffices that the accented half of the bar, or the accented part of a time, be consonant or typometric. We were therefore at liberty to compose that triplet with notes entirely foreign to the cadence, provided the first two, or even only the first note, of the said triplet should harmonize with the passing notes which, in the four lower parts, constitute the unaccented half of the first bar of this quintet. Indeed, the first note of the weak half of the first bar in the contralto being a *Mi*, it results that the first two notes of the treble, with the first note of the counter-tenor, form the two thirds which constitute the cadence. In the tenor it is also the first note of the arsis which is harmonic or consonant. In the bass it is also the first note of the weak half which is harmonic; but it is a *Mi*, whilst in the tenor there is a *Sol*; so that, with the tonic with which this first bar of the bass begins, we have again a cadence, two more sounds of which are besides heard in the typometric bass. The cadence is therefore uttered more than three times in the arsis of this first bar, after having strongly impressed itself on the ear in its straight and natural order in the thesis. Let us now examine the *second bar*.

The transcadence reigns in it. Another triplet forms the unaccented half or arsis of this bar. The first note of this triplet is the principal transcadencial one. The second note is with the last in the interval of a minor third, everywhere the most pleasing of all; but it is here the one which can better bring the *Sol*. Now there is no other note than *Sol* that could be a better precursor of the note *Si*, which is the leading precadencial sound, and immediately follows, to form, as it does, the accented half of the third bar. This is obvious: the *Sol* is, with the *Si*, in the interval of a third; and no sound could announce the arrival of the precadence more properly than its typometric or tonic bass. The two notes of the arsis in the contralto are transcadencial. In the tenor, the three notes are so much transcadencial of *Do*, that they form the straight cadence of *Fa*. The three notes of the second bar of the singing bass are nothing else than the straight transcadence of *Do*. Finally, out of the four notes of the typometric bass, three are transcadencial. From the analysis, therefore, of this second bar throughout the whole harmonization, it is evident that the transcadence is not less perceptible in the unaccented than in the accented half of the said bar.

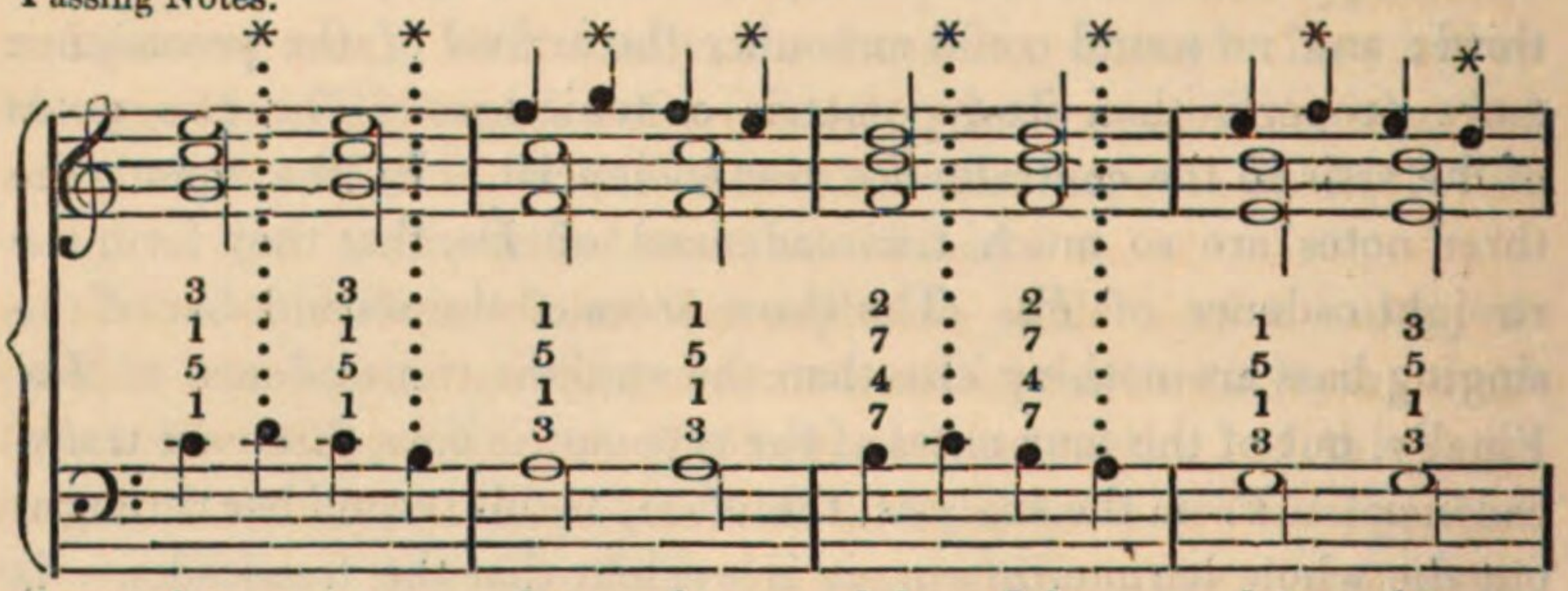
Let us proceed to the examination of the third bar. It exclusively belongs to the precadence. We have already seen that the seventh or sensible forms its thesis: we may now observe that its

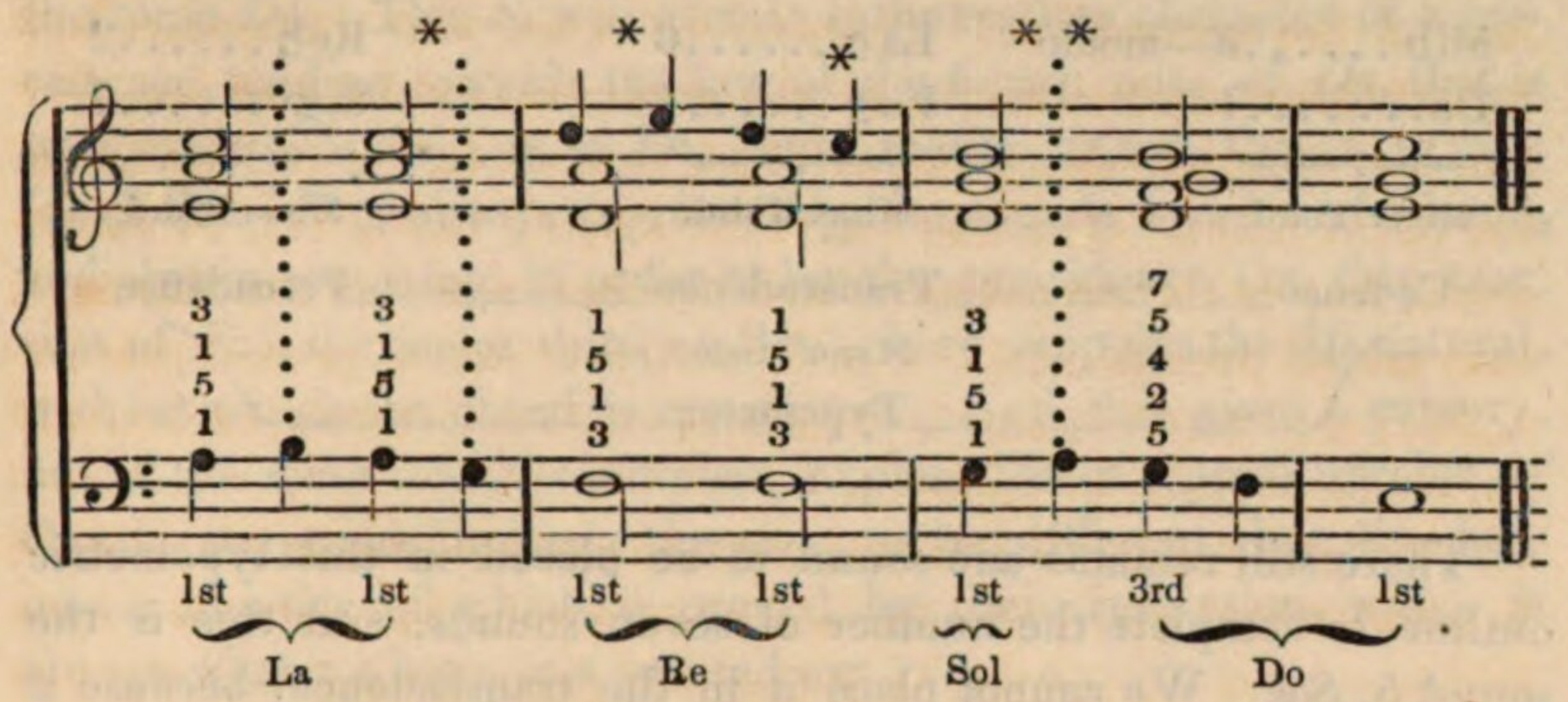
arsis is composed of two triplets, which, in their six notes, present four of the precadence. The passing notes, viz. the unaccented half of this second measure, in the contralto, exhibits no less than five precadencial notes; and there are as many in the corresponding bar of the tenor. The like bar of the singing bass gives, of its five notes, four to the precadence; and the four notes of the thorough bass are all precadencial. Consequently it remains proved that the arsis of this third measure is, nearly as much as its thesis, exclusively consecrated to the precadence.

We pass from it to the final cadence and the fourth bar. As it is wholly filled up by the harmonic or typometric note, we have nothing more to remark in it than the grace formed with the two ornamental notes which precede the tonic, *Do*, in the fourth measure of the treble. Ornamental or flying notes, placed as they are, may effect a true retardation; but were we to suppose them to be an intrinsic part of the preceding bar, or to form a measure by themselves, they would in either case constitute a formal and positive retardation of the tonic; by it properly resolved.

We subjoin a last example about passing notes, showing that the dissonance caused in the unaccented part of time by those filling-up sounds is always relative to the tonic, i. e. to the typometric bass of the chord, or of the measure; but that, on the contrary, passing notes are very often consonant with the accidental bass, resulting from the inversions of chords, and called by various authors the *melodic bass*.

Passing Notes.





Let us add, in concluding this §, that we have not, in it, extended our comparisons beyond the sounds consonant in each bar; but that the dissonant sounds harmonize also between themselves; and that we leave to our benevolent reader the care of ascertaining this fact, the existence of which, though devoid of real importance, adds nevertheless a smoother and brighter polish, and is a perfection of the art.

We have been considering, in these examples, the typometer in a few of its relations with simple and with *multiple* melody: we reserve what we have further to say on this subject for other articles, in which this formula will be shown, explaining facts and mysteries, which, without it, would remain what they are in the old theories, that is to say, utterly vague, and inapplicable to every practical purpose.

§ 11. We shall now proceed to analyse the composition of this formula, the elements of which possess a surprising simplicity, and a perfect conformity with the principle of consonance already laid down in our theory.

The diatonic scale embraces all melody and every species of *harmony* in nature. So long as there is unity of scale, there is unity of key; and, on this account, tonic and modic unity. The moment unity of scale is broken, all the other unities disappear, and cacophony is the consequence.

The basis of harmony, that is to say, the only consonant conjunction existing in music, is the *minor third*.

Here are the three minor thirds, serving as a model for every melody, whether simple or multiple:

Example.

Mi♭.....3—modic	La♭.....6	Re♮.....2
Do.....1	Fa♮.....4	Si♮.....7
Minor Third.	Minor Third.	Minor Third.

Cadence — Transcadence — Precadence

Minor Mode.

Typometer

There still remains one sound to be placed in this typometric outline, to complete the number of seven sounds, and this is the sound 5, *Sol*. We cannot place it in the transcadence, because it would make a dissonance of a chromatic second with the *La* flat, and a diatonic second with the *Fa* natural, which would make a double dissonance against the key, and against the mode. We must therefore place this *Sol* either in the cadence or in the precadence. As it gives, in both, an interval which is not a minor third, it is evident that it is on the point of causing an alteration in the harmony; but, as this interval is not a *second*, this alteration will not be cacophonic; it will, in fact, always be produced by a third, but it must be a major third.

Example.

Major Third.	Sol♮..5 / Mi♭..3	modic.	Minor Third.	La♭..6 / Fa♮..4	modic.	Sol♮..5 / Si♮...7	Major Third.
Minor Third.	Do♮..1					Re♮..2	Minor Third.

Cadence — Transcadence — Precadence

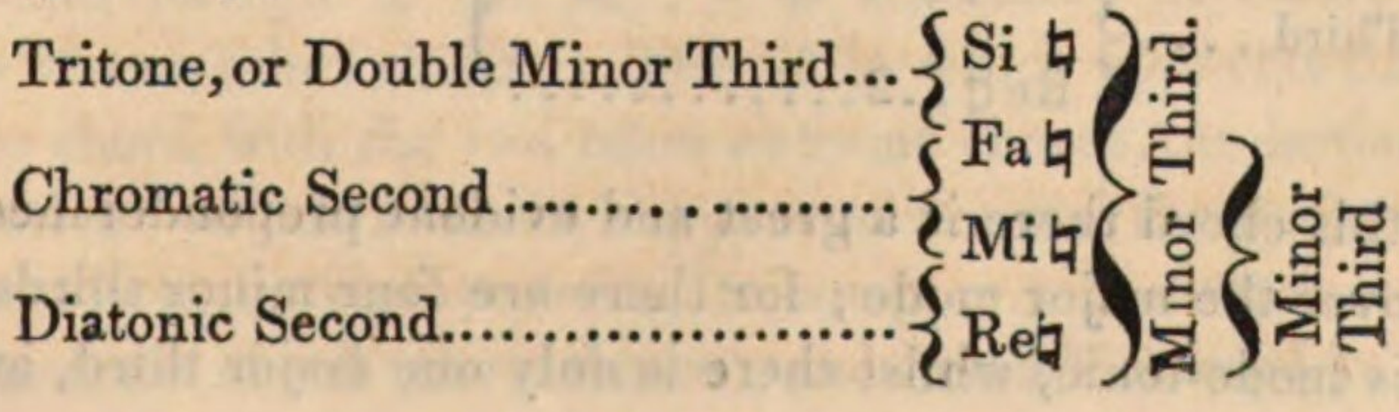
Typometer

We see that the *major third*, added to the minor third in the cadence, and likewise in the precadence, renders these chords identical with respect to the gamic intervals; for the sixth, *Si—Sol*, of the precadence is harmonically the same as the major third, *Sol—Si*, given by its inversion (called by us octavism): as well as the major third, *Mi—Sol*, of the cadence. And thus we have these two chords essentially altered in their nature by the addition of a major third, and tending, consequently, to a change of the key which they represent. We shall speak, in the first place, of the cadence. It represents the key of *Do* minor, and inclines towards the key of *Fa* minor. Effectively, introduce into it the *Si*, which

is at a minor third from the *Sol*, and at the interval of a second from the tonic *Do*. This *Si* will give to it the restless character of a precadence, tending towards the key of the fourth note of *Do*, that is to say, towards the key of *Fa*. Our reader knows that a second (as *Si* flat—*Do*), always representing the sounds 4 and 5 of a scale, and always requiring, in order to be the precadence (in this case, that of *Fa*), the major third on the 5, here supposes the *Mi* natural, without which the chord is cacophony. And this gives a cursory, but at the same time the simplest, explanation of a great number of chords, supposed, in other theories, to be different, but the harmonic identity of which is proved by their resolution, which is always what we have just pointed out.

Now let us come to the *precadence*. Here we find it already composed of three sounds, *Re*, *Si*, *Sol*. This chord is harmonically equal to *Sol*, *Si*, *Re*, *cadence* of the key of *Sol* major, and consequently it inclines towards the sound 4, note *Do*: and this is the reason why this chord, in the key of *Sol* (as in all keys whatever), admits the addition of that sound of the scale of its fourth note which is not common to its own scale, and this is the *Fa* natural, relatively to the key of *Sol*, in which the *Fa* is *sharp*. When we have employed all the seven sounds of the scale in the typometric division, the third chord or *precadence* becomes invariably immodic, notwithstanding its minor and major thirds; and it does so because this chord employs neither of its *modic* sounds of the scale, the 3 and the 6.

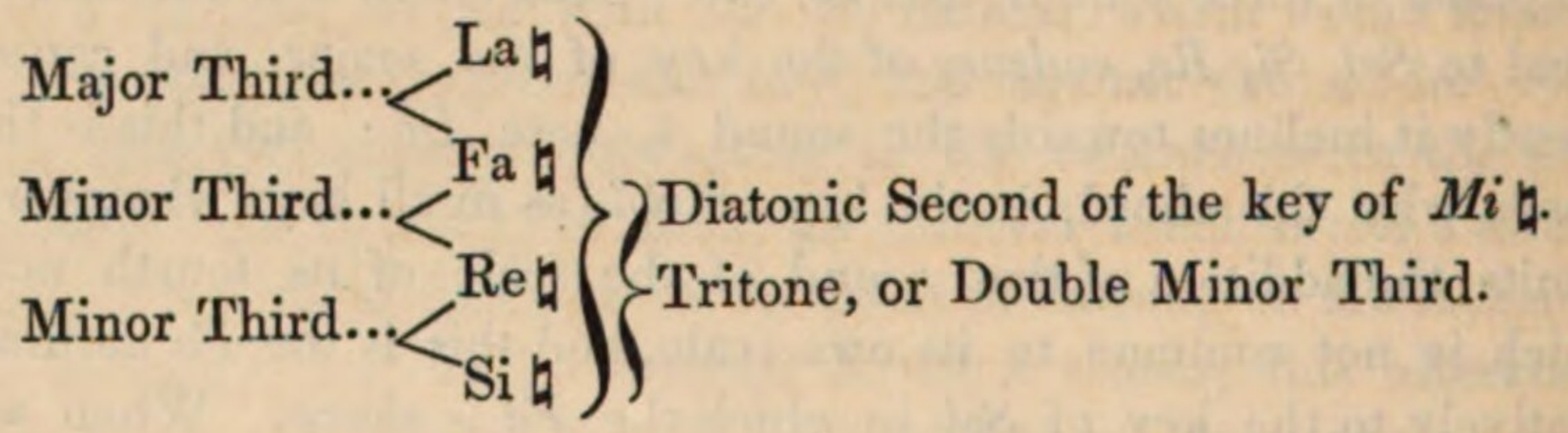
If we wish to give to the *precadence* the modic character which it wants, we must introduce into it one of its modic sounds, the 3 or the 6. But the 3 is incompatible with the minor mode; for it makes therein a *chromatic second*, *Re—Mi* flat. In the major mode, it would make a double *diatonic second*, *Re*, *Mi*, *Fa*, with the additional inconvenience of presenting together, and therefore in cacophony, two cadences; namely, *Sol*, *Si*, *Re*, key of *Sol*; *Mi*, *Sol*, *Si*, key of *Mi*; and two *precadences*, *Re*, *Mi*, key of *La*; and *Fa*, *Sol*, key of *Do*. If, to allay this frightful uproar of sounds (denominated chords by the ancient theories), we take away the sound 5, *Sol*, dissonance will still be the consequence; as demonstrated in the following example:



Who would take upon himself to say, before he consulted his ear, that this cacophony was a precadencial chord, that is, the immediate precursor of the *cadence* or *perfect chord?* So, also, in practice, it is treated only as a retardation of the same chord, that is to say, a retardation of the sound *Fa* natural major, which is the nearest to the cacophonic sound, *Mi natural*, which must disappear before its emission.

It will be quite the reverse if we introduce into the precadence the modic sound *Six* major, *La natural*; and here we have the chord which will result from it. In the ancient theories, this chord bears different names, which vary according to its inversions. In the first position it is called Chord of Seventh on the Sensible.

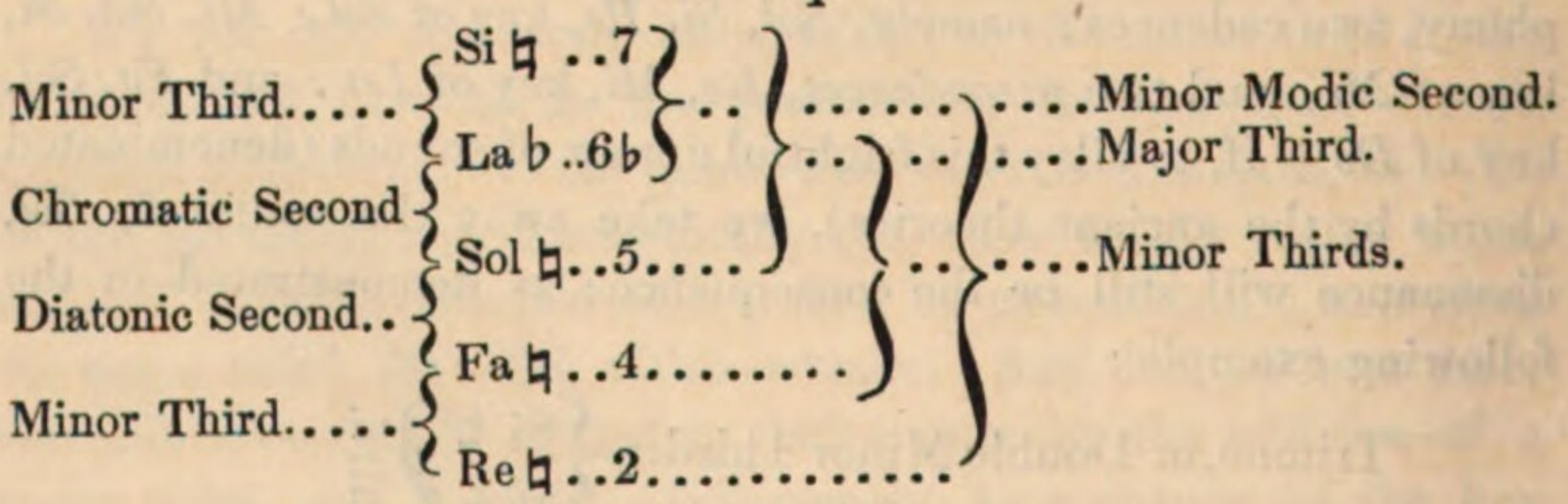
Example.



Although this chord is freed from the sound *Sol* 5, yet how far is it from being precadencial! so also when it is immediately succeeded by the cadence; even this is not final. The resolution of the cacophonic *La* is, therefore, on the *Sol* 5, which it has supplanted and retarded. This cacophony (or chord of seventh on the sensible) belongs exclusively to the major mode; but it is not a genuine precadence: the major mode, therefore, has no exclusive precadence.

Let us see what arises herefrom in the minor mode. By adding to the neuter precadence, 2, 4, 5, 7, the modic sound, *La* flat 6, we shall have what follows:

Example.



In this chord there is a great and evident preponderance of the minor over the major mode; for there are four minor thirds, one of which is modo-tonic, whilst there is only one major third, and that

not modo-tonic. In like manner, notwithstanding the two dissonances of diatonic second and major third, together with the cacophony of chromatic second, *this chord is not rejected* by the ear; indeed, it plainly *insinuates* that it would rather dispense with the sound *Sol*, which is the cause of the three imperfections; and this is really what is practised, in order to attain the true *perfect chord of nature*, denominated in the ancient theories *chord of diminished seventh*, *chord of diminished fifth*, and *sensible sixth*, chord of tritone with minor third, chord of extreme sharp second, &c. &c.; but designated in the new theory simply as precadence of minor mode. This term is in strict conformity with the idea which authors give us of this chord by making it apparent that it belongs exclusively to the minor mode, and that it cannot be employed in the major, except by virtue of a third (so M. Catel has stated in his Treatise, p. 16). We say, therefore, Precadence of Minor Mode. Cadence.

7.....,,.....,, 1
6 b.....,,.....,, 5
4.....,,.....,, 3 b
2.....,,.....,, 1

Herein we see how the employment of *seven sounds* of the scale on two parts of time produces the only two integral and active chords of the *melo-harmonic* progression, *precadence and cadence;* and how the sound 6 is cacophonic in the major mode, and euphonic in the minor. We are bound to bring under the notice of our readers the back cadence, or second cadence (which we call transcadence), produced by the scale, in order to complete the trinary typometer, of which the binary and its compounds are alterations.

The second chord of the scale, called collateral chord and perfect chord of sub-dominant, is what we call *transcadence*. This term implies—

1. That it follows and does not precede the *cadence;*

2. That it is itself a cadence, of which the *precadence* is understood;

3. That it precedes and does not follow the *precadence* of the key, of which it is the *transcadence*.

It is clear that, in order to compose this chord without admitting any sound foreign to the key, it is absolutely necessary to take sounds of two other chords. This it is which connects this intermediate chord with the two other extreme chords, the initiative and terminative; in other words, the *precadence* and the *cadence*.

Therefore, in endeavouring to compose a perfect chord, other than the tonic chord (the cadence), and one *which employs a sound*

of this and another sound of seventh on the dominant (precadence), we discover none except the following Collateral Chord:

1	tie or link	1		7		1
5		6		5	tie or link	5
3		4	tie or link	4		3
1	tie or link	1		2		1
Cadence.		Transcadence.		Precadence.		Cadence.

This chord is the only perfect chord which, by employing the sound 6 (minor or major, according to the nature of the *sound* 3), complies with the conditions previously laid down.

In the typometer which we have hitherto presented as the pattern of all the others, our reader has seen how the sound *Do*, 1 of the key of *Do*, as it is 5 of that of *Fa*, connects them and ties the cadence to the transcadence by a perfect link. Between the transcadence and the precadence the connexion cannot be so perfect, because *Fa*, 4 of the key of *Do*, as it is note 1 in that of *Fa*, has in neither of these two scales the sharp, which it must assume to become 7 of the key of *Sol*, the cadence of which is the precadence of *Do*, as the cadence of *Fa* is the transcadence of the same scale of *Do*. Nevertheless, as no other note but *Fa* can be the 7 of the gamut of *Sol*; though the *Fa*, tonic of *Fa* and transcadencial of *Do*, be bereft of its due sharp in *Sol*, and though, in the typometer now under analysis, it becomes the link between the transcadence and precadence in its capacity of both 4 of *Do* and 1 of *Fa*, but not as 7 of *Sol*; its previous utterance, notwithstanding its naturality, is still a sufficient precursor of the cadence of *Sol*, coming as the precadence of *Do*.

Our reader is, undoubtedly, struck every day more with the astonishment of this wonderful fact, never before discovered, viz. that the notes 1, 4, and 5, those three principal supports of the edifice of every typometer, are always and unexceptionally acting reciprocally between each other in such a manner as the 4 and 5, sole and constant generators of the scale of the note 1, are themselves the note 1 of each gamut that lends its cadence to be the transcadence or the precadence which belongs to the cadence grounded on the primitive note 1, generated by the 4 and the 5; whilst this 4 and this 5 are, unavoidably, the typometric, the thorough, or tonic bass of the transcadence in which the 4 enters as 4, as well as of the precadence in which the 5 enters as 5. In fine, the transcadence is a *second cadence* or consonance as pure as the first cadence, but it is not so bright, not so powerful, nor conspicuous, because it is not preceded by as many sounds of its own gamut as is the cadence; it is not as perfectly announced. The transcadence is to the cadence

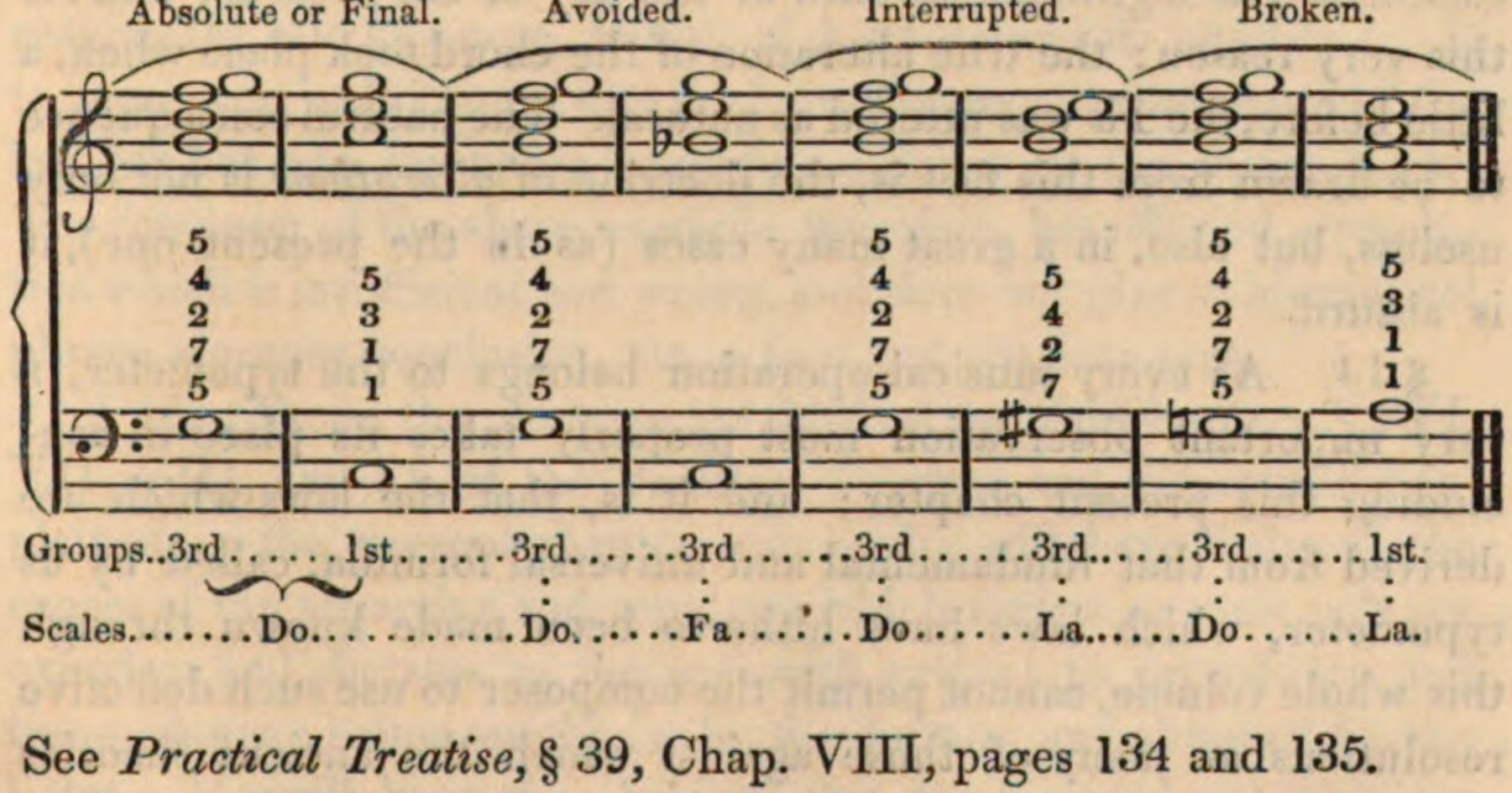
that which a first secretary is in an embassy to his ambassador: both functionaries are often successively acting in the same negotiation. We compare, in music, the transcadence with respect to the cadence, to what, in luminousness, is the light of oil, with regard to the fulgour of gas. The transcadence, however, completes the key, completes the mode, completes the progression of both melody and harmony, increases the variety of both, and prepares the sonorousness, which is the indispensable and last step before the ear's arrival to the wished-for final rest.

We recommend to our readers to peruse again all that they have already found on the subject of the three typometric groups in the *Prolegomena*, §§ 42, 43, 52, 54, 56, in the Chapters V, VI, VII, VIII, IX, XXIX, and XXX of the *Practical Treatise*.

§ 12. In order to complete the instruction of pupils, or to satisfy the curiosity of masters, as to what is connected with the vital theory developed in the present chapter, we shall not conclude it before we have explained the interesting topics to which this and the following §§ are consecrated.

We have stated, in *Prolegomena*, § 32, page 76, that the names given by the old school to various cadences are henceforth superfluous and superseded by the names of the three typometric groups. The following example demonstrates that each of those cadences is formed of two different chords belonging to two distinct scales, with or without dissonance:

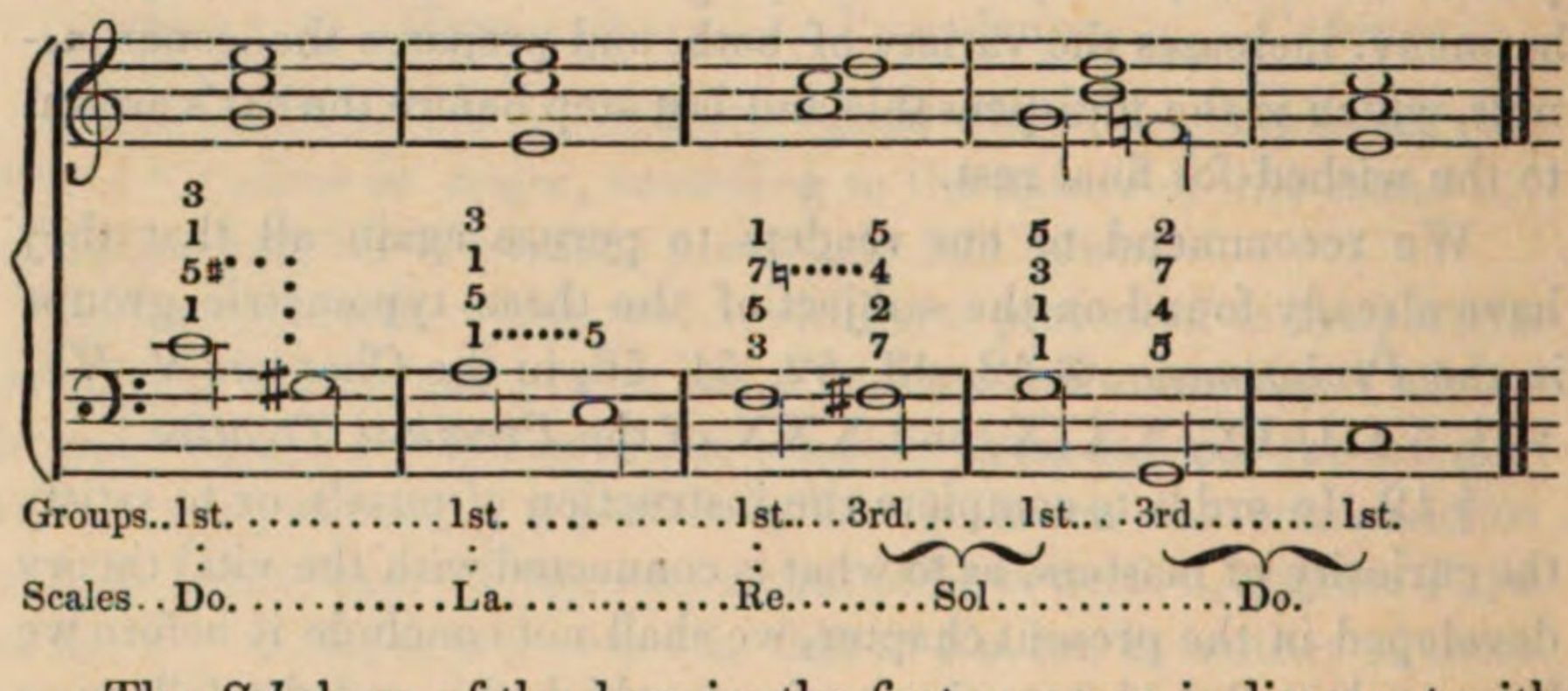
Absolute or Final. Avoided. Interrupted. Broken.



See *Practical Treatise*, § 39, Chap. VIII, pages 134 and 135.

§ 13. It is a rule, without exception, that the alteration of any sound in any cadence or transcadence whatever, suddenly transforms them into precadencial chords. This truth has already been demon-

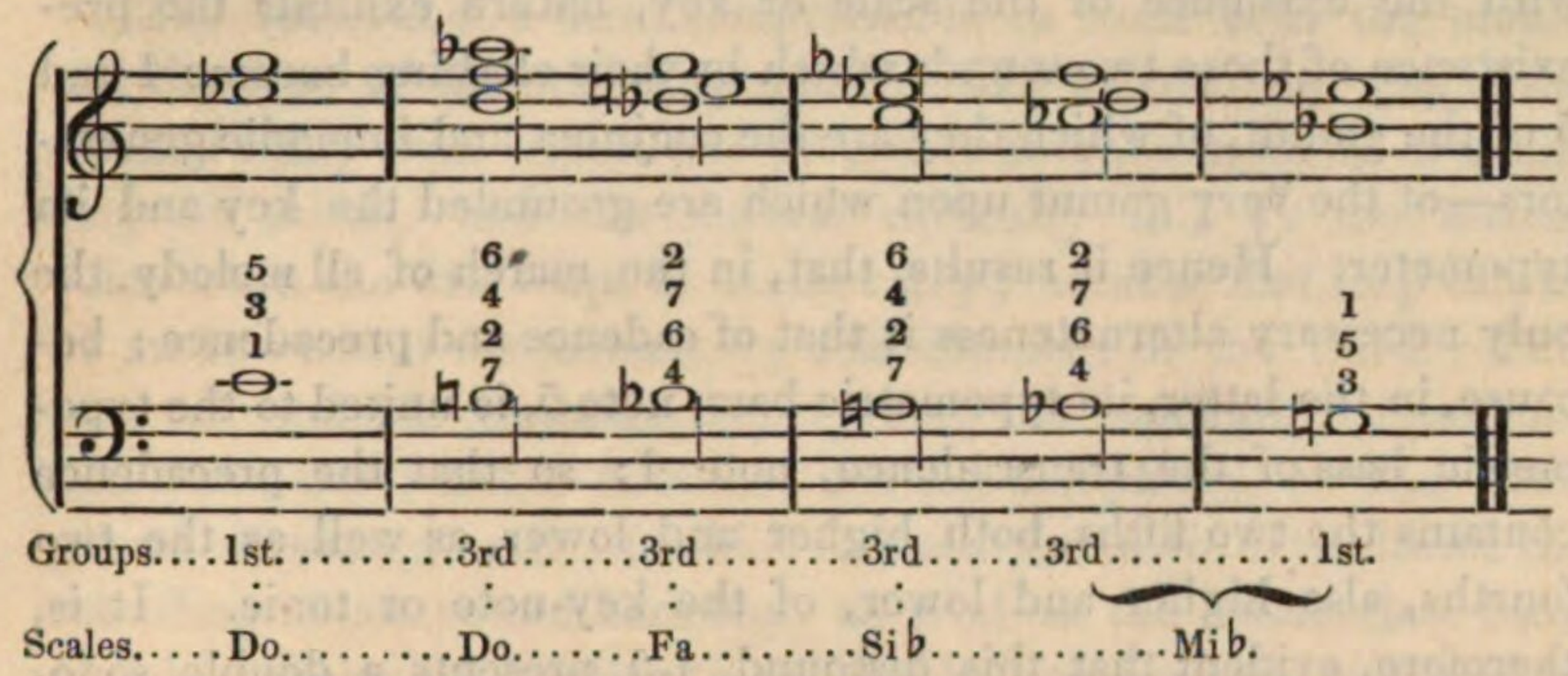
strated in various parts of the present Grammar, chiefly in *Prolegomena*, § 72, and Practical Treatise, Chap. XXII, § 77. A further proof, however, drawn from the following example, which we extract from Mr. Catel's *Treatise on Harmony*, will probably not be superfluous. The example is this:



The *Sol* sharp of the bass in the first measure is dissonant with both the *Sol* and the *Do* natural of the chord; but it does evidently lead the melody to the key of *La* natural, in which the note first altered is the *Sol* sharp, note 7. For this reason, Mr. Catel gives, immediately after it, the first group or cadence of *La* natural. It is equally seen, in the third bar, that the chord of third, fifth, and sixth, *Fa* sharp (*La* natural, *Do*, *Re* natural), is the imperfect precadence of *Sol* natural; and that, consequently, the note *Fa* sharp, which is presented by the author as *altered*, is nothing but reestablished as legitimate seventh of the key of *Sol* natural; and for this very reason: the true alteration of the chord took place when, a little before, the *Fa* was uttered as natural. The natural consequence to be drawn from this fact is, the doctrine of *alterations* is not only useless, but also, in a great many cases (as in the present one), it is absurd.

§ 14. As every musical operation belongs to the typometer, a very important observation most properly takes its place in concluding this present chapter; and it is, that the laws which are derived from that fundamental and universal formula, called by us typometer, which laws have hitherto been made known through this whole volume, cannot permit the composer to use such defective resolutions as many of those against which the ancient theories (notwithstanding their successive improvements to this day) give no caution, and have established no rules. Our reader will find a proof of this assertion by examining the following example, in which its celebrated author, the learned Mr. Catel, has fallen into a resolution

which, besides being irregular and unpleasing, can never be approved of by the ear of a good judge. The example is this:



It shows the substitution of note 6, minor, for note 5, by which change the third group or neutral precadence is converted into the minor modic precadence (see *Practical Treatise*, § 24, Chap. VII, pp. 120 and 121, and the two following chapters all thro ugh), which is equal to the harmonic root. The author presents the four parts descending at once by semitones, from *Do* natural minor to *Mi* flat major. So improper here is this cadence of the scale of *Mi* flat, that it gives uneasiness to the ear, which it causes both to anticipate and wish for the cadence of the key of *La* flat, by the very reason that it has been awakened by the powerful precadencial influence of the major third (*Sol* natural) on the tonic *Mi* flat, to which it communicates the character of note 5 of the gamut of *La* flat, bereaving the said key-note, *Mi* flat, of that title and its number 1. It is, moreover, well known, that the harmonic root, as last chord of the last bar but one, can never precede a cadence of the major mode. The composer of the above example, therefore, has effected a resolution which is insufficient and wrong, and does not give to his musical phrase a proper conclusion, viz. a final and absolute rest.

§ 15. From the doctrine established in the Chapters V, VI, VII, VIII, and IX of the Practical Treatise, and theoretically explained in the present chapter, our reader will have deduced the causes of the attraction and repulsion which tonism or tonic potency exercises and dictates to the ear, with respect to precadence and transcadence; being sought for by the former, and shunned by the latter. He will have also observed that the transcadence seeks for the precadence; and that, until it has reached it, or, if we may say so, until it has incorporated itself with it, it does not begin to be attracted or acted upon by the tonic. Our reader will, moreover, have

seen that mystery unravelled for him; viz. that, previous to the formation of the typometer, which formation is almost simultaneous with the existence of the scale or key, nature exhibits the pre-existence of those two sounds which by their clashing become 4 and 5 of the gamut, of which they are the conjunct and immodic generators—of the very gamut upon which are grounded the key and its typometer. Hence it results, that, in the march of all melody, the only necessary alternateness is that of cadence and precadence; because, in the latter, its typometric bass, note 5, is united to the typometric bass of the transcadence, note 4; so that the precadence contains the two fifths, both higher and lower, as well as the two fourths, also higher and lower, of the key-note or tonic. It is, therefore, evident that this dissound, 4-5, presents a double sonorousness, which appears to be sole and indivisible, and which has no equal in music, as it suffices to announce the immediate arrival of the modo-tonic consonance in the necessary resolution of itself (the dissound 4-5) in the third 3-5, the necessary companion of the tonic, note 1. In the key of *Do*, for instance, the dissound 4-5 announces the immediate arrival of the modo-tonic consonance, *Mi-Sol*, which is its necessary resolution, whilst it is the inevitable companion of the tonic, *Do*.

Here we put an end to this vitally important chapter, which we recommend to our benevolent reader to peruse rather twice than once. In four of the ensuing chapters, the titles of which will be, *Melo-harmonic Properties of the Third*, *Mechanism of Melody*, *Of the Three Dominants*, *Transcadencial Alterations*, he will find the full complement of the theory of the typometer.

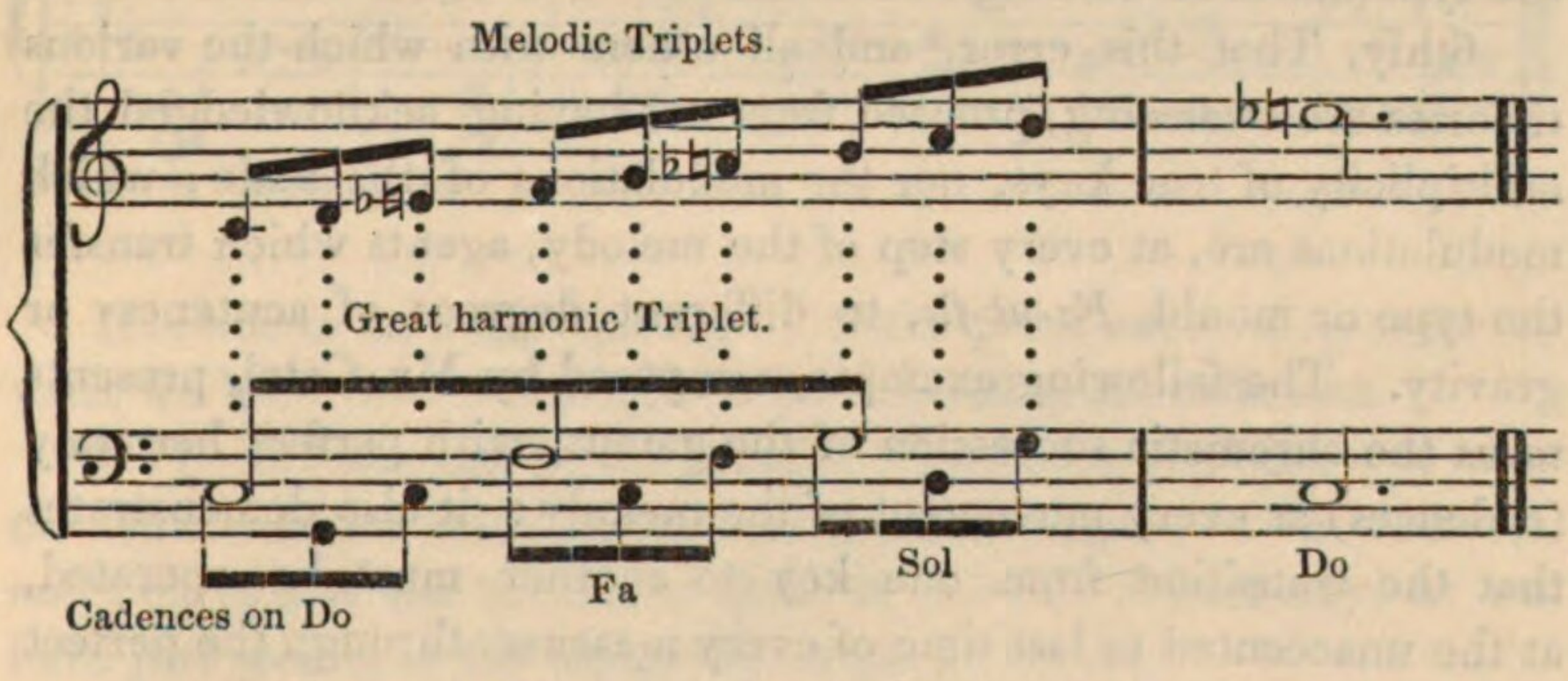
CHAPTER VI.

MELO-HARMONIC PROPERTIES OF THE THIRD.

§ 16. In the §§ 27, 30, 45, and from 49 up to 58, inclusively, of the *Prolegomena;* farther down, and more especially in the § 47, Rule 13, of Chap. IX, in the Practical Treatise, pages 148 and 149; our reader has acquired a preparatory knowlege that will enable

him better to understand at once the fundamental doctrine contained in the present elucidatory chapter.

The interval of a third comprehends in itself both the mould and the type of all musical properties and movements: hence the innate facility with which two persons who know nothing of music sing in thirds, and the natural difficulty felt by the second voice when the first leaps to another key; because that leap cannot be made without the momentary abandonment of the third. This interval, indeed, contains melody and the euphonic consonance and dissonance; but it does not contain cacophony, or that compound dissonance out of which certain theorists have drawn the retarding or compound harmony, as well as the numberless cacophonic, perplexing, useless, inexplicable, and contradictory chords, which have hitherto been the despair of musical students and composers. That shapeless pile of dead-born or ephemeral chords does not tend a little to corroborate our division of sonorities into consonant, dissonant, and cacophonic; which division exactly corresponds with the classification, made by the Greeks, into *Concinos*, *Dissinos*, and *In-concinos*. The first two kinds of our triple distinction may be expressed as follows:



This position of the question being thus understood, let us begin with giving the proof as to melody.

Every sonorousness produces a musical phrase as soon as it has articulated a third. The above example gives us the melody of the scale divided into three diatonic triplets, running through the three typometric cadences, grounded on the great melo-harmonic trisson or thorough bass, 1—4—5. The same example demonstrates:

1stly. That the primitive rhythm of music, with regard to both time and sound, is the trinary measure; for, in even notes or sounds, there is neither cadence nor accented time:

2ndly. That this very truth, which is distinctly demonstrated by each separate triplet, which makes its own musical phrase, composed of two cadences at its extremities, and of one precadence in the middle, is also comprised, and appears still more evident, in the trisson, which lays the foundation of the cadence of each triplet in the three sounds of the typometric or tonic bass:

3rdly. That the interior note of each triplet is not an indifferent, a transitory, or a passing note, but a note essentially harmonic and precadencial, belonging to the key on which each triplet is grounded:

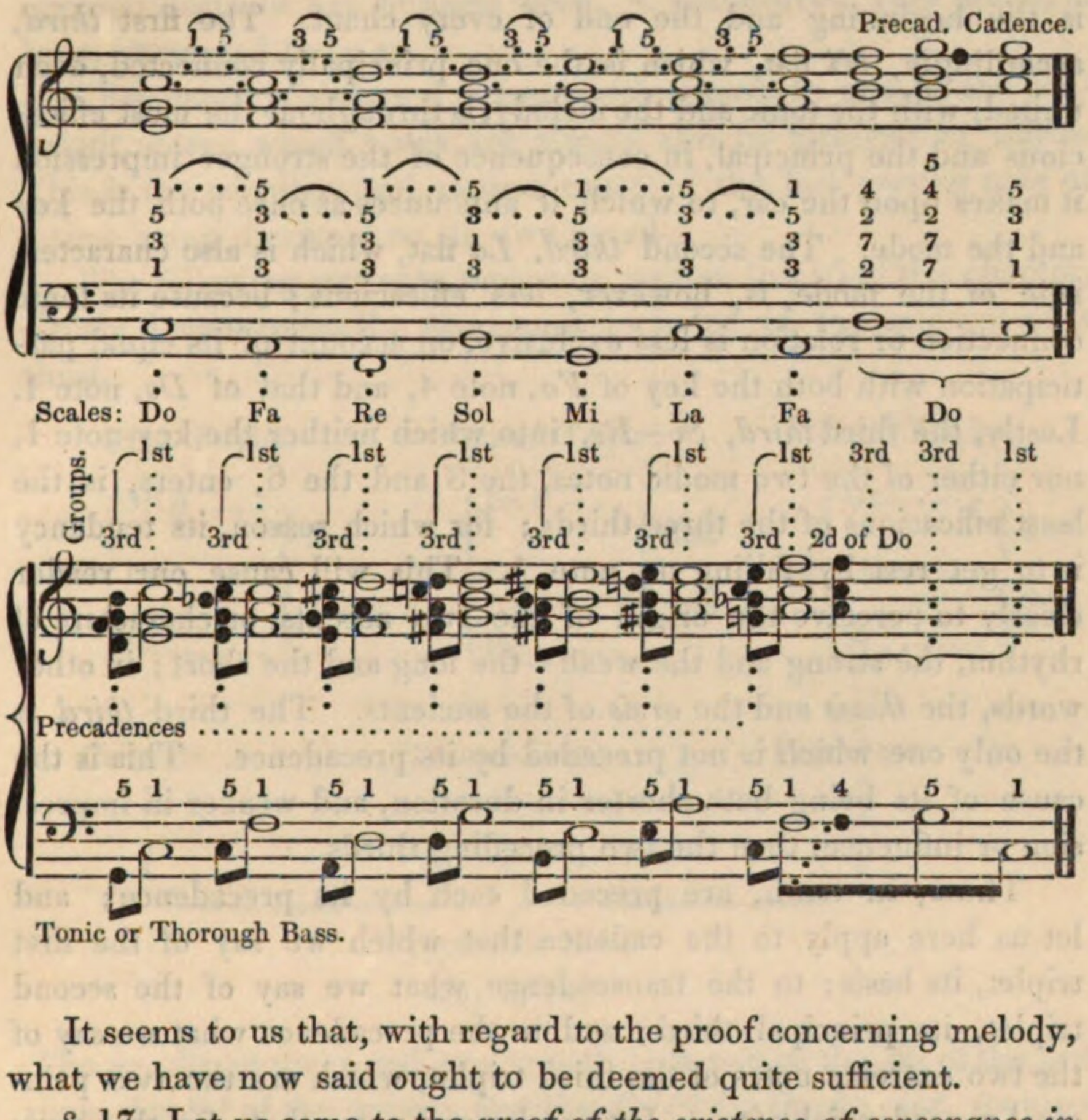
4thly. That the anterior observation teaches us that which has hitherto remained unknown; viz. the reason why passing notes are approved of by the ear, notwithstanding their apparent dissonance; and it is because they keep in constant alternation the natural march of the precadence towards the cadence:

5thly. That the nick-name of *Fa-ut-fa Music*, invented by the indiscreet presumption of some modern contrapuntists, turns itself against them, by proving to themselves that no music can be good unless it be *Fa-ut-fa Music;* so that they must come to the point of acknowledging their own compositions to be either *Fa-ut-fa* music, or thoroughly detestable. Let us not forget the march of the typometric or thorough bass!

6thly. That this error, and all others with which the various theories are swarming, proceed from not having acknowledged the multiplicity of true keys, nor the modulations of the scale; which modulations are, at every step of the melody, agents which transfer the type or mould, *Fa-ut-fa*, to different degrees of acuteness or gravity. The following example, composed by Mr. Catel, presents to us the chromatic succession of the gamut, with perfect harmony (cadences) at every movement of the melody: it also demonstrates that the transition from one key to another must be operated, at the unaccented or last time of every measure, through the perfect chord (cadence) of a key, which cadence, being intrinsically a precadence, openly fills up the office of such for the following scale.

We shall see that all the cadences of every accented time are preceded by other cadences, which, filling the office of precadences, admit, in that character, of the precadencial cyphering, 2, 5, 7; and, consequently, that the typometric bass marches from every measure to the next with the numbers 5—1, which signify from precadence to cadence. We can accordingly add the note 4 to all the chords of every unaccented part of time. The author has omitted the said note 4, for the sole purpose of fulfilling his promise of presenting perfect chords only till the last bar but one, in

which he utters the note 4, in order to complete the final precadence.



It seems to us that, with regard to the proof concerning melody, what we have now said ought to be deemed quite sufficient.

§ 17. Let us come to the *proof of the existence of consonance in the third.* If we consider the third with respect to its extreme notes only, it is the primitive type or mould of harmony, as we have just seen it in the foregoing chapter.

Every melody makes three movements, in order to constitute a beautiful and complete phrase. All these three movements have their foundation and support in the three thirds already spoken of, at § 47, Rule 13, Chap. IX, page 148, and again brought before our reader at the beginning of the present chapter. They are consequently governed by our three typometric chords, articulated in their natural order. These three thirds, if sung by only one voice, are by themselves a pretty and simple melody: if sung by two voices, they are a pretty double melody—viz. harmony. We need not dwell any longer, now, on this topic, to which we shall revert in our chapter on the *Dominants*. Let us therefore proceed.

As soon as, for sound 1 or the tonic of its gamut, a simple sound has been chosen, which, being utterable, may be called primitive, that sound becomes both the basis and the crown of the melody; it is the beginning and the end of every chant. The first *third*, accordingly, *Mi* flat, which is the one principally connected, even united, with the tonic and the melody, is throughout the most efficacious and the principal, in consequence of the stronger impression it makes upon the ear, to which it announces at once both the key and the mode. The second *third*, *La* flat, which is also characteristic of the mode, is, however, less efficacious; because its tonic connection or relation is less exclusive, on account of its equal participation with both the key of *Fa*, note 4, and that of *Do*, note 1. Lastly, the third *third*, *Si—Re*, into which neither the key-note 1, nor either of the two modic notes, the 3 and the 6, enters, is the least efficacious of the three thirds; for which reason, its tendency is to get rest by falling on note 1. This will cause our reader clearly to perceive the origin of the two accents, or characters of rhythm, the strong and the weak—the long and the short; in other words, the *thesis* and the *arsis* of the ancients. The third *third* is the only one which is not preceded by its precadence. This is the cause of its being both shorter in duration, and weaker in impression or influence, than the two preceding thirds.

These, in truth, are preceded each by its precadence; and let us here apply to the cadence that which we say of the first triplet, its basis; to the transcadence what we say of the second triplet, its principal third; and to the precadence what we say of the two extreme notes of the third triplet, which are the two principal precadencial notes. Let us also say now, that, for this very reason, the first triplet or the cadence, and the second triplet or the transcadence, are long and accented, or strong. Moreover, the cadence is more so than the transcadence; because the former is announced and determined by its complete precadence, whilst the latter is preceded by only its incomplete precadence. It therefore remains evident, that the third (and principally the minor third) contains the elements of consonance, and of the melo-harmonic motion.

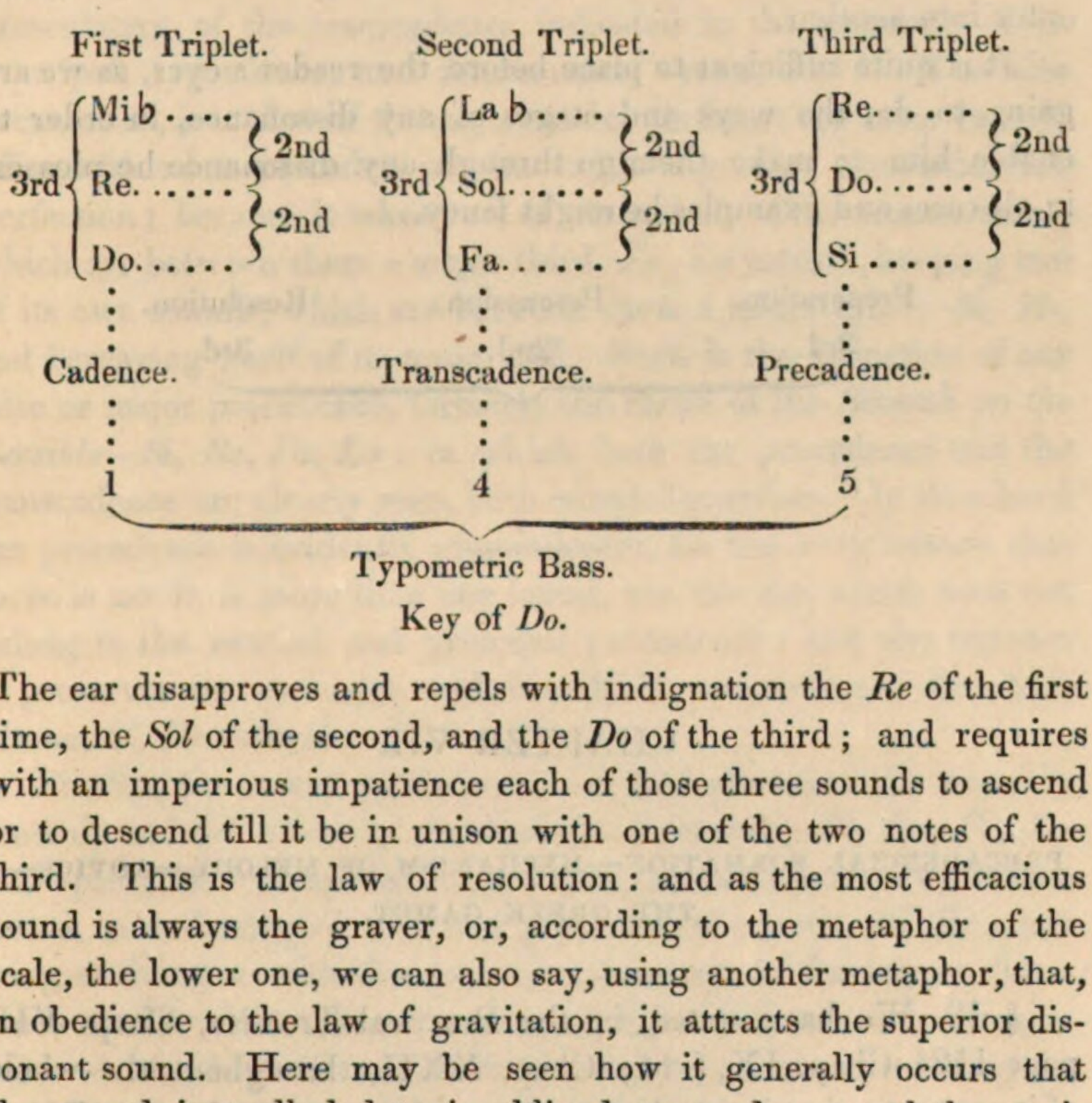
§ 18. Let us conclude this chapter by giving the *proof of the existence of dissonance in the third.*

Dissonance, which, according to the theories actually in force, is the last of musical elements or principles, is, in our theory, the first of all: a truth which we have already more than once shown to our reader, from the beginning of our *Prolegomena* to the present

page, but which we shall confirm and prove to him still more categorically in the chapter of this Treatise entitled *Special Confirmatory Comparisons*, by means of the very examples with which the opposed doctrine has hitherto been, if not proved, very much, at least, attempted to be so.

Dissonance is always a second with respect to one of the consonant notes; which notes are always also in intervals of thirds. This is the primitive and natural cause of the last passing note of a time being dissonant on its own chord.

The following example, musically written in § 15 of this chapter, clearly demonstrates the dissonance included in the interval of a third.



The ear disapproves and repels with indignation the *Re* of the first time, the *Sol* of the second, and the *Do* of the third; and requires with an imperious impatience each of those three sounds to ascend or to descend till it be in unison with one of the two notes of the third. This is the law of resolution: and as the most efficacious sound is always the graver, or, according to the metaphor of the scale, the lower one, we can also say, using another metaphor, that, in obedience to the law of gravitation, it attracts the superior dissonant sound. Here may be seen how it generally occurs that the sound just alluded to is obliged to go down a whole semitone. The inexorably merciless, the incorruptible third chases it down, and compresses it until it has sunk it and incorporated it with its fundamental note. So it is if the third be a major one: but if it be minor, the very same thing then happens which takes place in all cases of compression; viz. the compressed element penetrates through the part which offers the least resistance to its efforts,

which part is of course the weakest of those which surround it; and, in this case, the dissonant second penetrates upwards to the superior note, which presents to it only half the way to walk, as well as half the resistance to overcome, i. e. a semitone instead of a whole degree or tone. Let us, finally, state, in plain words, that any dissonance must always be resolved through the shortest possible motion, that is to say, in the nearest consonant note. This is the whole substance of so many vague rules with respect to ascending or descending resolutions.

We now think it perfectly useless to present to our readers a long table of dissonances, in order to demonstrate to them that any dissonance begins in or goes out of a third, and that they end or enter into another.

It is quite sufficient to place before the reader's eyes, as we are going to do, the ways and stages of any dissonance, in order to enable him to make them go through any dissonance he pleases, in all cases and examples he might fancy.

Preparation.	Percussion.	Resolution.
3rd.	2nd.	3rd.

CHAPTER VII.

PRECADENCIAL FORMATION—MECHANISM OF MELODY—ADVICE—THE GREEK GAMUT.

§ 18. We have stated, in the Practical Treatise, Chap. VII, page 112; Chap. IX, § 44; Chap. XXII, throughout the whole of its extent; that in music there are only two chords, the Precadence and the Cadence: and we have, in § § 76 and 82, pp. 209 and 216, of the last-mentioned chapter, given examples of harmonic marches composed of precadences or cadences only. The transcadence, therefore, is not absolutely necessary to the construction or to the existence of the most beautiful melody, were it even of the most protracted length. Why is it so? In no musical theory

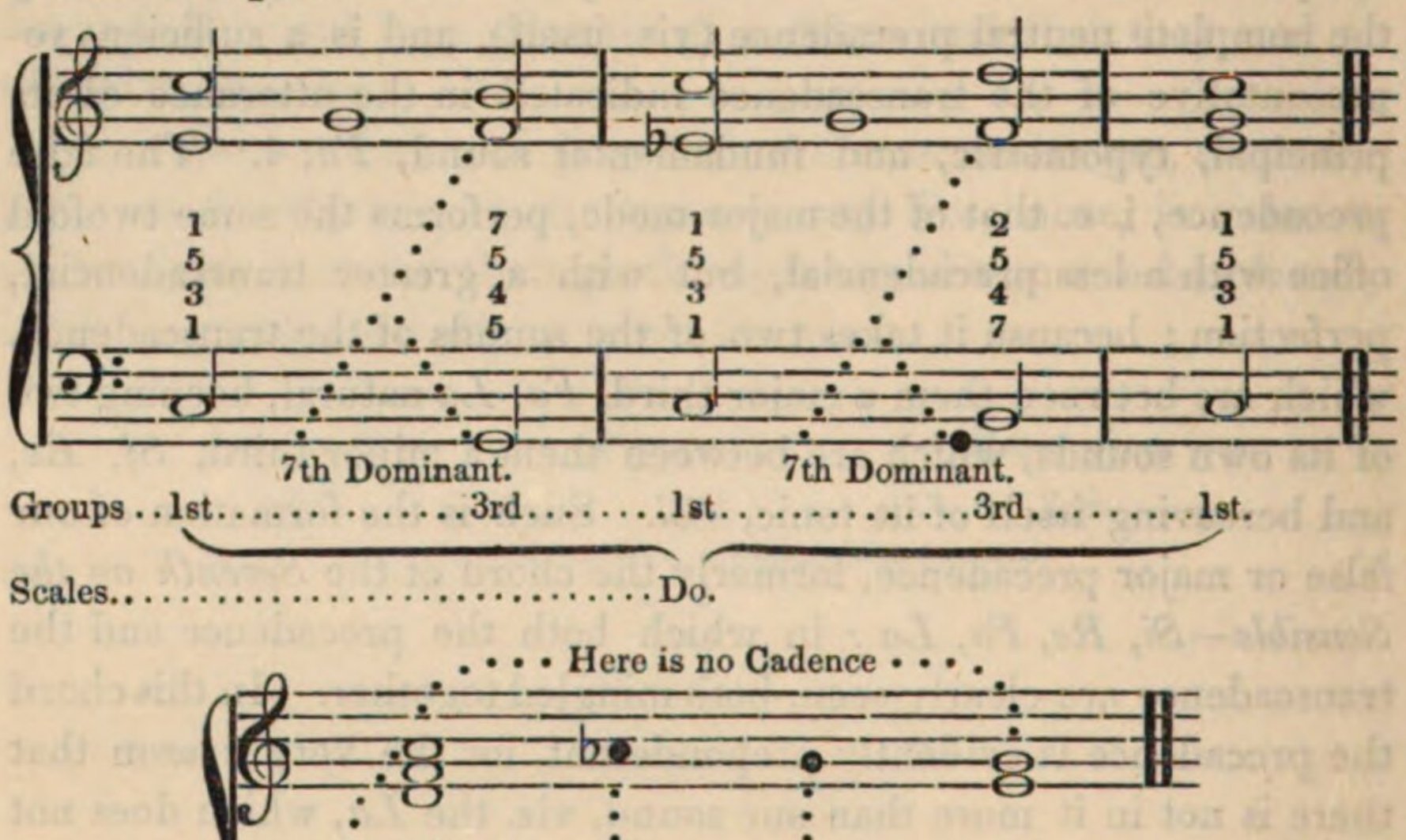
hitherto known can an answer to this question be found. That answer we shall give, as follows:

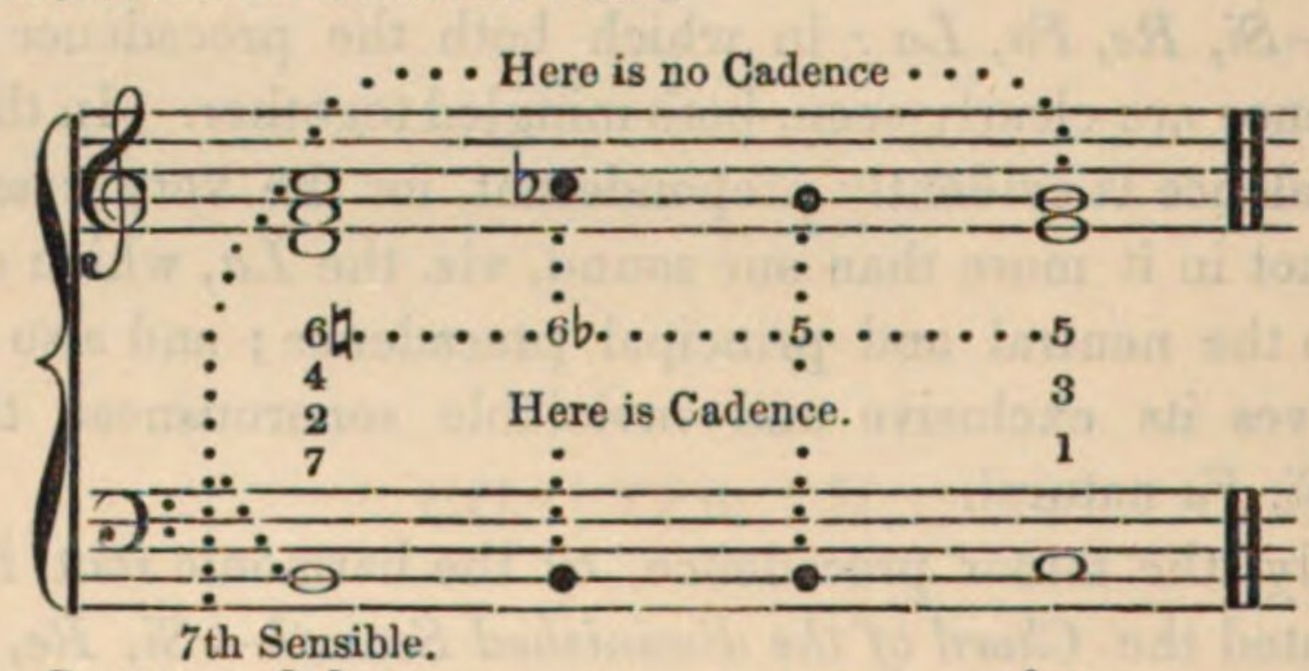
Our reader knows the composition of the three precadences. In the scale of *Do*, for instance, major precadence, 2, 4, 6, 7,—*Re*, *Fa*, *La*, *Si*; minor precadence, 2, 4, 6 flat, 7,—*Re*, *Fa*, *La* flat, *Si*; and *neutral precadence*, which is the principal, 2, 4, 5, 7,—*Re*, *Fa*, *Sol*, *Si*. This last precadence, the neutral, in uniting the two typometric sounds, viz. the two tonics, *Fa* and *Sol* (the former the foundation of the transcadence, and the latter of the precadence), joins, amalgamates, and in some way discharges the office of both the precadence and the transcadence, by simultaneously articulating the complete neutral precadence (viz. itself), and is a sufficient representative of the transcadence indicated in the utterance of its principal, typometric, and fundamental sound, *Fa*, 4. The false precadence, i. e. that of the major mode, performs the same twofold office with a less precadencial, but with a greater transcadencial, perfection; because it takes two of the sounds of the transcadence, which are between them a major third, *Fa*, *La* natural, keeping two of its own sounds, which are between them a minor third, *Si*, *Re*, and bereaving itself of its tonic, *Sol*. Such is the formation of our false or major precadence, formerly the chord of the *Seventh on the Sensible—Si*, *Re*, *Fa*, *La*; in which both the precadence and the transcadence are clearly seen, both mingled together. In this chord the precadence is evidently preponderant, for the very reason that there is not in it more than one sound, viz. the *La*, which does not belong to the neutral and principal precadence; and also because it preserves its exclusive and inviolable sonorousness, the fifth tritone, *Si*, *Fa* natural.

Finally, the minor precadence, or the harmonic root, formerly denominated the *Chord of the diminished Seventh—Si*, *Re*, *Fa*, *La* flat,—presents the same fact of two transcadencial notes, *Fa*, *La* flat, united to and mingled with two precadencial sounds, *Si*, *Re*; but being or doing so with the supreme advantage of having no dissonance at all—viz. neither the interval of second, nor that of major third—in the disposition of its four sounds; and then including in itself four times the inviolable sonorousness of the tritone.

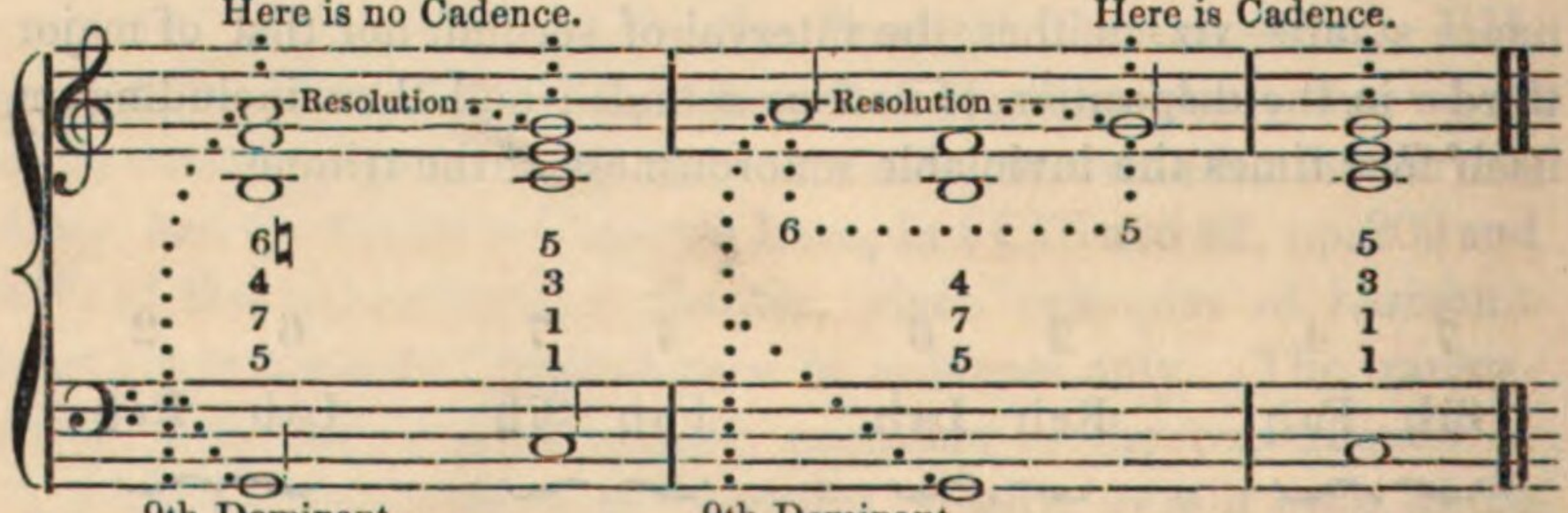
7	4	2	6	4	7	6	2
Si♮	Fa♮	Re♮	La♭	Fa♮	Si♮	La♭	Re♮
Tritone.		Tritone.		Tritone.		Tritone.	

The three following examples will show to our readers—1st. how the dominant seventh (or rather the *tonic dominant*, as may be seen in the ensuing chapter) is to be used in both the major and the minor modes; 2ndly. how the false precadence, formerly the *seventh or sensible*, may be employed; and that, without the previous resolution of its imperfection, it produces no fall on the final chord: it is not, in one word, precadencial, though it should be preceded by the cadence: 3rdly. how the dissonance of the ninth or the second may be resolved. The third example confirms, by a distinct use of the false precadence, that which has been demonstrated in the anterior example.



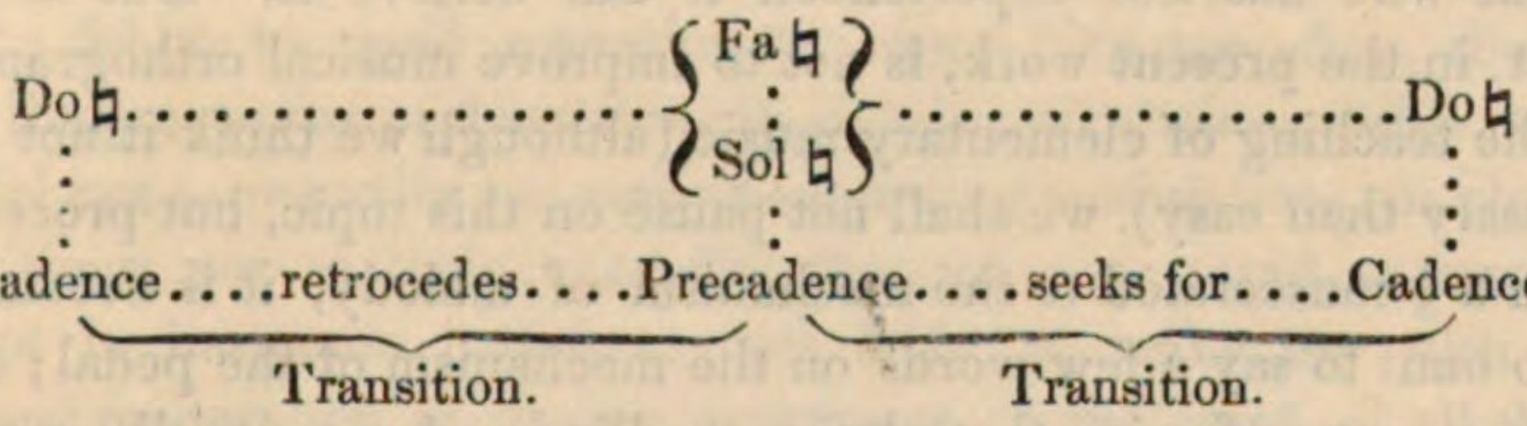


Here is no Cadence.



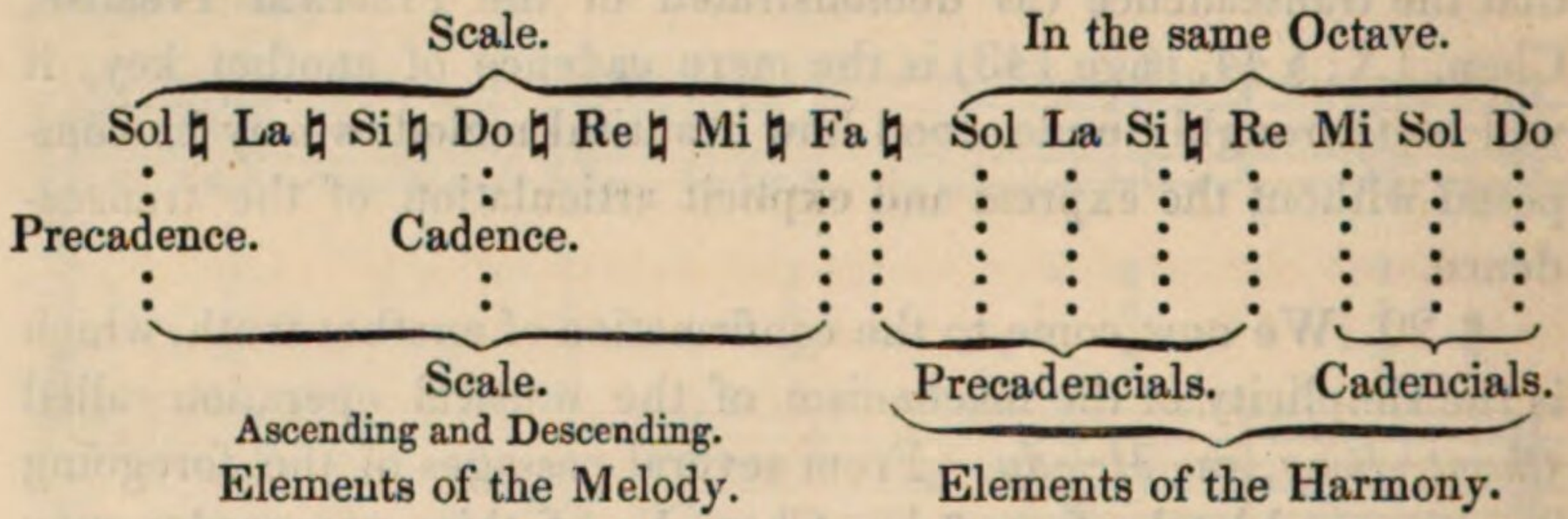
From the foregoing analysis and synthesis of the three precadences, it becomes manifest that they all, more or less, unite in themselves the transcadencial with the precadencial sonorousness and character; and, secondly, that the neutral precadence alone is perfect, as a complete precadence, because it alone keeps its tonic sound, its essentially typometric note, *Sol*, 5, and excludes the modic note, *La* flat, 6, and *La* natural, 6; and alone, therefore, presents the restless major third on its tonic, *Sol* (*Sol*, *Si*), and also generates the scale or key of *Do*, product of the conjunction formed in it of the *Sol* with the *Fa*. If to the preceding observations it be added, that the transcadence (as demonstrated in the Practical Treatise, Chap. IX, § 44, page 143) is the mere cadence of another key, it will be thoroughly understood how beautiful melodies may be composed without the express and explicit articulation of the transcadence.

§ 20. We now come to the confirmation of another truth, which is the simplicity of the mechanism of the musical operation called *Chant*, *Song*, or *Melody*. From several passages of the foregoing Treatise, and lately, from § 13, Chap. V, of this, our reader may have inferred that, in music, all consists in going towards or seeking for the tonic, and shunning or flying from the tonic. We have demonstrated that there are no more than two sonorities; viz. the precadence and the cadence. It is obvious, therefore, that they must be the two terms and the two objects of that attraction, as well as of that repulsion—of that research, as well as of that flight. In fact, it is so in the following manner:



All the leaps, all the ornaments of every kind, that can possibly be introduced into a melody, are submitted to that rule, and acted upon by that law. This fact is absolute, and without a single exception. But there are several ways through which the composer may come to the observation of that rule, to the compliance with that law; because the diversity of those ways results from the variety of keys, but causes no difference whatever in the operation itself, whether practically or theoretically considered; for it always consists of going to or from another precadence, or another cadence; which is

as much as to say, another gamut or key. We beg to observe, on this account, that as nobody can fly from what he does not know, or has not met with, it is evident that the movement to go and fetch the key-note or tonic is naturally anterior to the movement that aims to fly from it. We here subjoin a plain and logical consequence of this truth. The gamut or scale ought to be taught to any one beginning to study the sol-fa, or the rudiments of music, causing all heptachords or gamuts to commence by their fifth, not by the tonic.

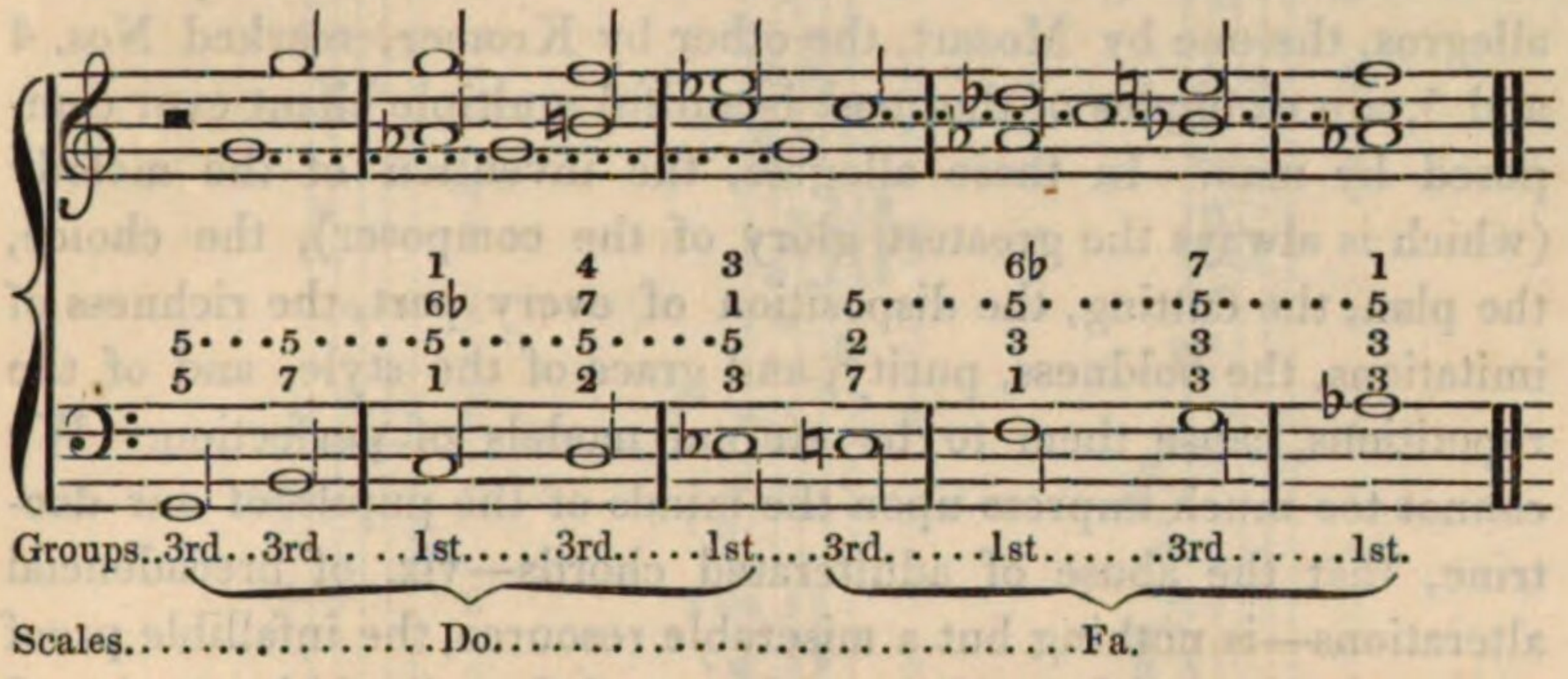


Young pupils would probably spend two or three days more to learn this formula than to learn the usual diatonic scales; but how many months, years even, of study would be spared and saved by the early knowledge of this same formula! What a deal of various and useful information it contains! How much it simplifies and accelerates all musical operations, without one single exception! No one who has not experienced it can believe it. But as our object, in the present work, is not to improve musical orthography, nor the teaching of elementary music (although we think it not less necessary than easy), we shall not pause on this topic, but proceed.

In a § consecrated to the mechanism of melody, it is becoming not to omit to say a few words on the mechanism of the pedal; viz. on the manner of using that always thrilling and occasionally powerful resonance.

The *pedal*, that permanent interior sound, causes, as we have already stated, a momentary dissonance against one or several sounds of another melody, or of other melodies; and that dissonance is never resolved in the pedal, but goes on in search of another consonant sound of the next cadence. The following example suffices to make the operation quite understood; and it affords, at the same time, by its keys and groups, a fresh confirmation of the Geneuphonic theory.

Interior Pedals.



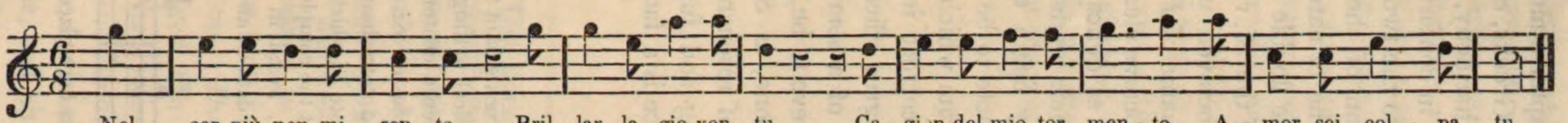
§ 21. In order to make a masterly, or at least a proper use of all the resources of the mechanism of melody, it is indispensable—1stly. to draw from the very essence of the subject all the musical thoughts which are to be expressed in it; 2ndly. if music, as we have stated, be the expression of a language, to suppose that such musical periods, sentences, or phrases which precede, are the expression of such or such a sentiment or feeling, or are the outcry of such a passion, or are the image of such a description of such a commotion, or the utterance of such a dialogue, or, finally, the representation of such a fact; 3rdly. to be careful not to deluge true musical ideas (whether energetic or sweet, graceful or eccentric) in a flood of useless and weakening notes; 4thly. to shun the contrary excess, viz. that of not giving them an extent adequate to their importance, or to the convenience of their proper development; 5thly. to avoid repeating the same idea too often, though with the precaution of flourishing its simple articulation; 6thly. to be careful not to resort to too many penetrating modulations, or abrupt transitions, nor to their excessive frequence or rapid succession, except in harmonic marches; and 7thly. to make use with the greatest moderation of graces, ornaments, in one word, of all those musical fineries or embellishments, the abuse of which almost always denotes absence of genius, poverty of thought, sterility of ideas, and want of taste.

Our reader has found, in Chapter XXXII of the Practical Treatise, entitled *Self-examination, Improvement, and Comprobation* (page 281), and will find, in the chapter entitled *Great Models*, the last of this work, some compositions, chosen among those masterpieces, the study and meditation of which are always the best rules. They awaken, or develop, and guide inspiration: they practically

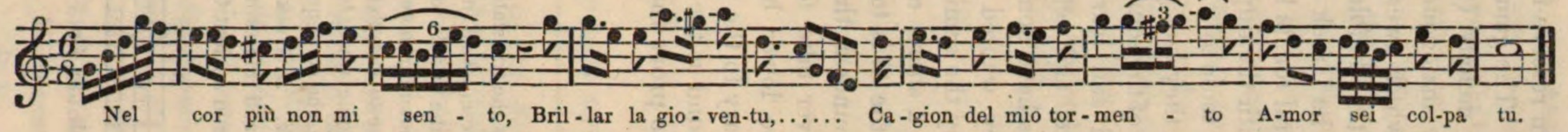
teach, not only the use of the mechanism of melody, but also the most skilful management of all the treasures of harmony. Two allegros, the one by Mozart, the other by Kromer, marked Nos. 4 and 5, are examples of the most beautiful multiple chant ever composed by man. In these allegros, the invention of the melody (which is always the greatest glory of the composer), the choice, the plan, the cutting, the disposition of every part, the richness of imitations, the boldness, purity, and grace of the style, and of the repetitions, cause them to be eternal models of perfection. We cannot too much impress upon the minds of the pupils of our doctrine, that the abuse of adulterated chords—viz. of precadencial alterations—is nothing but a miserable resource, the infallible proof of impotence, and that, when made use of, they should be employed as integral parts, but not as ornaments of the melody.

Here we think it necessary to warn our reader, that, when melodies of great masters, or even any melody, are flourished or varied, our fifth and seventh advice, given at the beginning of this §, must never be lost sight of, whether the melody be flourished with notes forming part of the measure, or ornamented with graces preceding or following the intrinsic notes of the bar, i. e. the notes of the simple or primitive air or song: it is indispensable that its melody should never be led astray, that the theme should never be altered, that it should never be flourished or ornamented with a rambling pen by the composer, or a roving voice by the singer. We propose, as an example of prudent and graceful flourish—viz. variation of a given melody,—the eight following bars of Paesiello's Cavatina, long ago known to our readers.

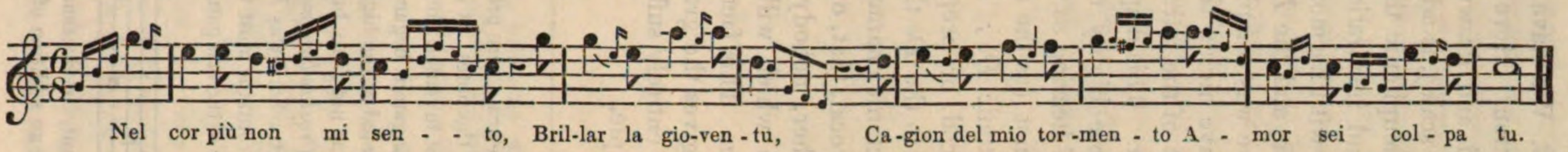
Primitive Melody.



The same flourished or varied.



The same ornamented with Graces.



§ 22. We have kept in reserve for this chapter a most curious observation. Here it is: The gamut of the Greeks, exclusively deduced and drawn from melody (not from harmony, as is the modern scale), is admirably analogous to, even in conformity with, the Geneuphonic theory, which owes its birth to the twofold sentiment and inspiration, to the double perception of the union of melody with harmony. The Greek scale has the *Si* natural for its first note, and the *La* natural for its last, and the double tetrachord or octave was completed with the duplication of the *Si*, repeated at one octave higher than the tonic *Si*. To that octaved note, complement of the tetrachord, they had given the name of *Proslambanomenos*. This disposition of the sounds of the octave clearly shows that those highly civilized and learned men, as delicate in their sense of hearing as cultivated and refined in their understanding, would not (as the moderns have done) abruptly begin their scale by the tonic *Do;* but they wanted the key-note to be preluded, announced, or prepared by the semitone *Si*, from which the voice ascends to the *Do* through a short, easy, and correct intonation*. The pretonic character of the *Si* is to such a degree efficacious and unequivocal, that, of two sounds at the distance of a semitone from each other, nobody will ever take for, or believe to be, the tonic, the one which will be the lower by a semitone, as *Si—Do*, or *Mi—Fa*. This fact, contrary to the principle of resonance, which always gives the gravest sound as the generating and fundamental note, is entirely sufficient to prove that resonance is a fact, but not a principle.

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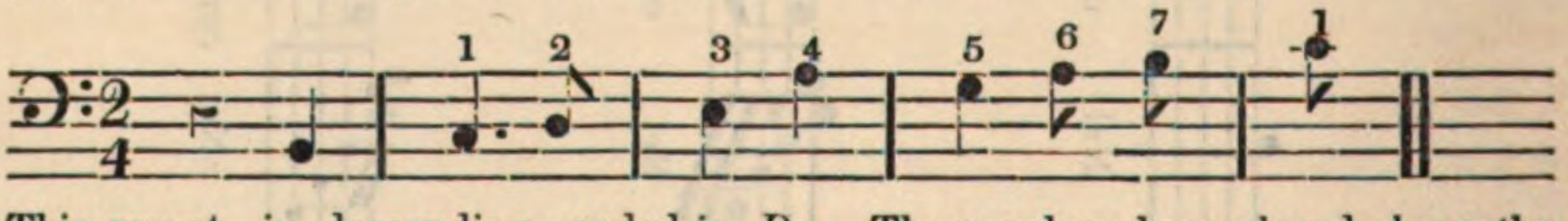
* The scale here presented is the translation of the Greek gamut to the actual names of the notes: it is its representation in modern musical writing. The note *Si* was not invented until about the middle of the fourteenth century. Now, if the Greek gamut began by the sound or note equivalent to our *Si*, and if that was repeated at the higher octave to complete the second tetrachord, the tonic was *Si*, and not *Do;* but if the tonic was *Do*, and the note *Si* which precedes it was the *Proslambanomenos* note, the consequence is, that the complement of the second tetrachord was *Do*, not *Si*. A Greek manuscript, found in Switzerland in 1841, contains most valuable and interesting historical data on an exact interpretation of the last gamut in use in ancient Greece:



This gamut, in descending, ended in *Do*. The numbers here placed above the notes are an addition of ours.

This being the case, let us be permitted to indulge in the following retrospection. The *Si*, pretonic note of the Greeks, is the principal of the four precadencial sounds of the Geneuphonic system; for which reason, we could denominate it the *tonic dominant* of nature. The *Si* natural, indeed, is the sound which, destroying the minor mode in the scale and key of *Sol* (*Sol—Si* flat), co-operates in the formation of the pretonic and immodic dissonance, *Sol, Si, Re, Fa*, or the neutral precadence. The Geneuphonic theory, therefore, long before we had consulted the melodic system of the Greeks, presented so striking a conformity to it, that it might be thought to be derived from or formed after it. The truth, however, is, that such is not the case. Our reader will find, didactically developed in the following chapter, an idea with which the present § has inspired us, and which we desire should be accepted and become classical throughout the whole musical world.

CHAPTER VIII.

THREE DOMINANTS.

§ 23. The pompous title of the *Dominant*, hitherto generally and exclusively granted to the note 5 of every scale, has been, and still remains, accepted and used in behalf of the said note 5 throughout the whole musical world.

The names given by the ancient theories to the notes placed under the domineering fifth clearly demonstrate that their respective position in the scale, from the key-note or note 1, to the dominant or note 5, was the sole influence attended to in the act of their baptism. The note 4, placed immediately below the dominant, received the name of *Subdominant*. Now, as between the tonic and the dominant the middle way—viz. the half of the seven semitones—is three semitones and a half, which distance (in the scale of *Do*, for instance) falls between the note 3, *Mi* flat, of the minor mode, and the note 3, *Mi* natural, of the major mode, this

note 3 received the denomination of the *Mediant*, expressive of its situation in the road or scale from 1 to 5. Then the note 2, as next below the mediant, was muffled up with the name of *Submediant*, just the same as note 4 had been huddled up with that of *Subdominant*. Thus was disposed the space contained from the gravest to the most acute sound of the common or perfect chord; which chord, in the Geneuphonic theory, takes the more proper, the more logical and characteristic name of *Cadence;* a name, besides, anticipated by the old school, and previously approved of by its masters *(see page* 359 *of this volume)*. The three notes above the 5 received the appellations of *Sixth* (called also *Submediant* by several theorists, on account of its modic sympathy with the third—see pages 73, 74, and 113), *Sensible* (or leading note), and Octave. These last two with the greatest propriety.

It remains, therefore, evident that the name of *Dominant*, conceded to the note 5 in every gamut, is merely representative of its position at the top of the cadence. Is this sufficient to render the note 5 deserving of its title? Let us examine this question.

We have said, in our *Prolegomena*, §§ 3, 60, and 61, what the importance of the note 5 is in itself, and as the fifth of a consonance. Our reader will, consequently, easily conceive that its principal merit is to be in the great trisson of all keys, the typometric bass of the precadencial, and one of the two sounds the clashing of which is the forerunner, even the generator, of the scale in which they are 4 and 5. And as the conjunction 4—5 is the very centre, the very soul of the precadence, it is manifest that no fresh key can be entered into but through its precadence; and that, though the note 5, as it stands proved, owes its title of Dominant to its position in the perfect chord, and not in that of the seventh (whether on the dominant, on the sensible, on the submediant, or subdominant), still, in reality, the dominant was, in the ancient systems, as essentially precadencial as it is so in the Geneuphonic theory, because it is so in nature. The precadencial character of the dominant must therefore be our starting point in the following observations, and in the proposition that ensues; all of which we respectfully submit to the musical world at large, and principally to learned theorists, professors, and composers, who are now so deservedly shining at its head.

§ 24. The §§ and rules referred to at the beginning of the foregoing Chapter VI, together with that chapter itself, are more than sufficient to exclude the slightest idea of the least pre-eminence of the fifth above the third. We have even, in § 3 of our *Prolego-*

mena, and somewhere else, said that the third is the true dominant. So it is with respect to its importance in harmony, compared to that of the fifth. But neither the one nor the other should henceforth be denominated by the term Dominant, which has hitherto had no meaning. A *dominant*, in our humble opinion, is really that sound or note which, domineering over all ears, causes in them a sort of uneasiness and impatience, and imperiously commands the immediate arrival of the sound or note which it announces and precedes. We should, consequently, wish that a dominant should be acknowledged—1stly. to declare the key; 2ndly. to declare the mode; and 3rdly. to declare the rhythm.

The note 4, standing, if we may say so, alone in the middle of the scale, between two thirds, major or minor, between the cadences, between different gamuts or keys, is so much the more the essentially rhythmical note, that it is the one the collision and conjunction of which with the note 5 is generative of the gamut; consequently of rhythm: that it inclines to descend to the modic note, the 3, whilst the seventh inclines to ascend to the octave or tonic, and the second inclines to ascend to the third, major or minor; that it forms a tritone with the note seventh or sensible; and is in the interval of a minor third with the note second. In the key of *Do*, for instance, *Si—Fa* is a tritone, as *Re—Fa* is a minor third. It is therefore an undeniable truth that the note 4, in all scales, is the only one that is eminently characteristic of rhythm, and exactly points out the two accents, or the two times, the weak and the strong, the arsis and the thesis; the unaccented and the accented part of the phrase, of the measure, of the time; in one word, the precadence and the cadence: for, indeed, without the note 4, the other three notes of the precadence become a true cadence. From the precadence of *Do* take away the *Fa*, and there will remain *Sol*, *Si*, *Re*, the cadence of *Sol*. It is, consequently, undeniable that the note 4 is the true representative of rhythm; and we propose that, on this account, it should henceforth be denominated the *Rhythmical Dominant*.

We have left the note 4, the *Fa*, in the scale of *Do*, standing in its centre, having one third at each of its sides, *Sol—Si* above, and *Do—Mi* below. As the extreme note of that third above the *Si*, 7, is called the sensible, because it announces in the most sensible and impressive manner, and immediately precedes, the tonic or octave, it is therefore, without the possibility of any reasonable objection, the true *Tonic Dominant;* since, without it, no tonic character does or can exist.

Having hitherto found the dominant which characterizes the rhythm, and that which characterizes the key, it remains for us to ascertain whether there is or not in every scale a note which, by its position in it, is characteristic of the mode; as the seventh or sensible is characteristic of the key. Let us apply our research to the key of *Do*, chosen in this chapter, and even throughout the whole of this work, for the model of our examples, and let us also begin by the minor mode. The same distance exactly exists between *Re*, 2, and *Mi* flat, 3, as between *Si* natural and *Do* natural: the second, therefore, is the true dominant of the minor mode, the only modic dominant which nature presents simple or unaltered. In fact, if the *Re*, 2, be united, in the interval of a minor third, to the tonic dominant, *Si*—viz. *Si*, *Re*,—the result is, that they announce the key *Si*—*Do*, and mode *Do*—*Mi* flat; and they lead to them both without having to overcome a greater distance than that of a semitone, *Si*, *Do*—*Re*, *Mi* flat. The election and the march of these two dominants (the tonic dominant and the minor-modic dominant) are so much the more rational, that the *Si* and the *Re* are precadencial notes; which quality, as before demonstrated, is indispensable in dominants.

Do we afterwards attempt to follow the same process in order to find a major-modic dominant? We soon become convinced that, of all the sounds belonging to the scale, there is not one fit to be major-modic dominant without suffering an alteration. The *Re*, 2, has to ascend a semitone more than the tonic dominant, and the minor-modic dominant a whole degree, to reach the note 3, *Mi* natural; thus losing the parallelism of natural elevation, and converting itself into the *tonic dominant* of another key, viz. *Mi* 7, *Fa* 1.

In this dilemma, shall it be said that the major mode must, in all the keys of music, be left without a modic dominant? We do not see why it should be so. In the key of *Mi* natural, has not the tonic, *Mi* natural, the *Re* sharp for note 7, sensible and tonic dominant? Is not a seventh the inversion of a second, and reciprocally? And, moreover, if, in all the gamuts of the minor mode, the note 7 need be raised a semitone by means of an accidental alteration, for the purpose of being enabled to fulfil its office of sensible, by being not more than a semitone distant from the tonic octave, why should not the same accidental ascent be resorted to in order to render the note 2 fit to become the modic dominant of the major mode? In that case even, there would be no irregularity whatever. The tonic dominant of the key of *Mi* natural would become by inversion major-modic dominant of *Do* natural; as the minor-modic

dominant of the scale of *Do* becomes the tonic dominant of the scale of *Mi* flat. Let it be therefore agreed that the modic dominant of the key of *Do* will be *Re* sharp, equal to *Mi* flat, and so on analogically in all the keys.

In consideration of all the reasons above adduced, we beg to propose, instead of the dominant hitherto acknowledged to be such, and which in reality was never dominant of any thing, to recognize henceforth three dominants, as follow:

Dominant of the Key, or Tonic Dominant, . .	the note 7, or sensible.
Dominant of the Mode, or Modic Dominant, . .	the note 2 as it is in the reigning key, for the minor mode; raised a semitone for the major mode.
Dominant of the Rhythm, or Rhythmical Dominant,	the note 4.

After having declared that the ancient sonorous titles granted by the agonizing systems have never been in the least useful to harmony or musical composition, and have only served as so many *sesquipedalia verba*, substituting a vain affectation of great science for the simple figures 2, 3, 4, 5, we do not pretend to say that the establishment of the three dominants which we have just proposed will be of great advantage or simplification in harmony and composition; but we have proved that our three dominants will at least represent ideas of truth and real facts: and if ever they should not be a guide (a case which cannot happen) in the choice of modulations, mode, and rhythm, they will surely be a luxury in classical arrangement, and cause a more correct appreciation of characters on the stage of melody and harmony, and a more complete parallelism in didactic regularity.

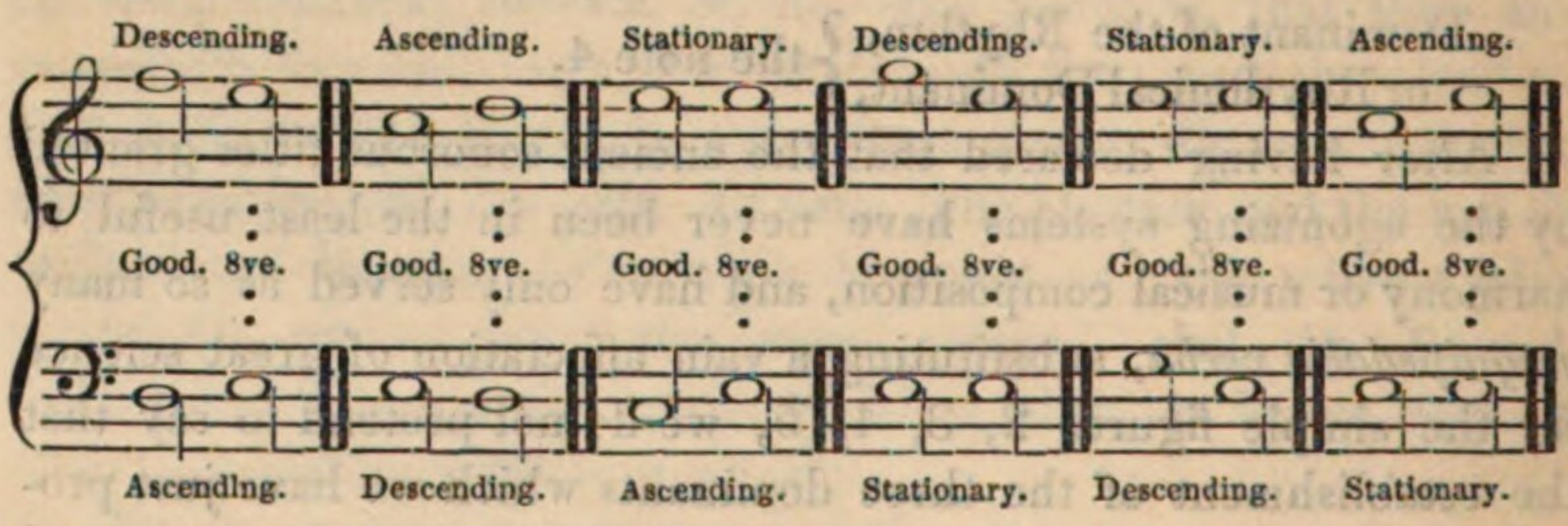
CHAPTER IX.

RETROSPECTION TO THE GOLDEN RULE, TO SYNCOPES, TO DISSONANCES, TO MODULATIONS AND TRANSITIONS.

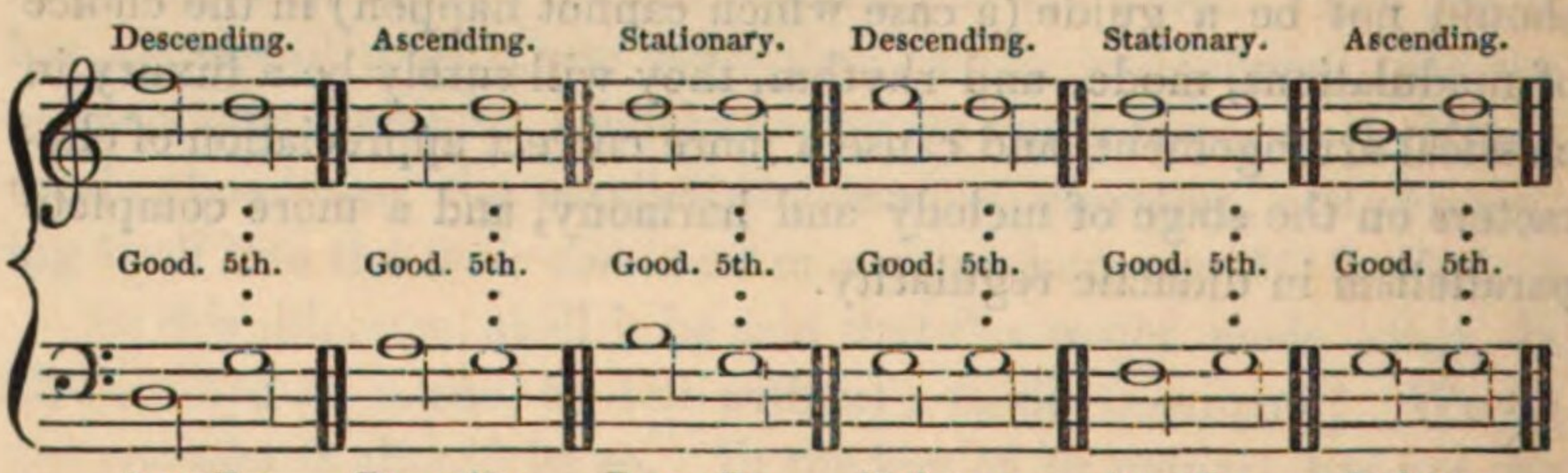
§ 25. When, in the *Practical Treatise*, Chapter X, we gave the *Golden Rule*, the application of which we endeavoured to clearly

show in that and following chapters, we presented the necessary examples in letters only, in order to oblige the musical student to write them himself in music. In case, however, he should have no master, and as we do not wish to abandon him to himself, we here subjoin the musical examples, which will enable him to ascertain whether his work is right or wrong. We adopted the same method with respect to the syncoped counterpoint, and to dissonances, of which we treated in Chapters XIX, XXI, and XXII; and our reader will also find hereafter, as to the principal examples, the same assistance as that just alluded to.

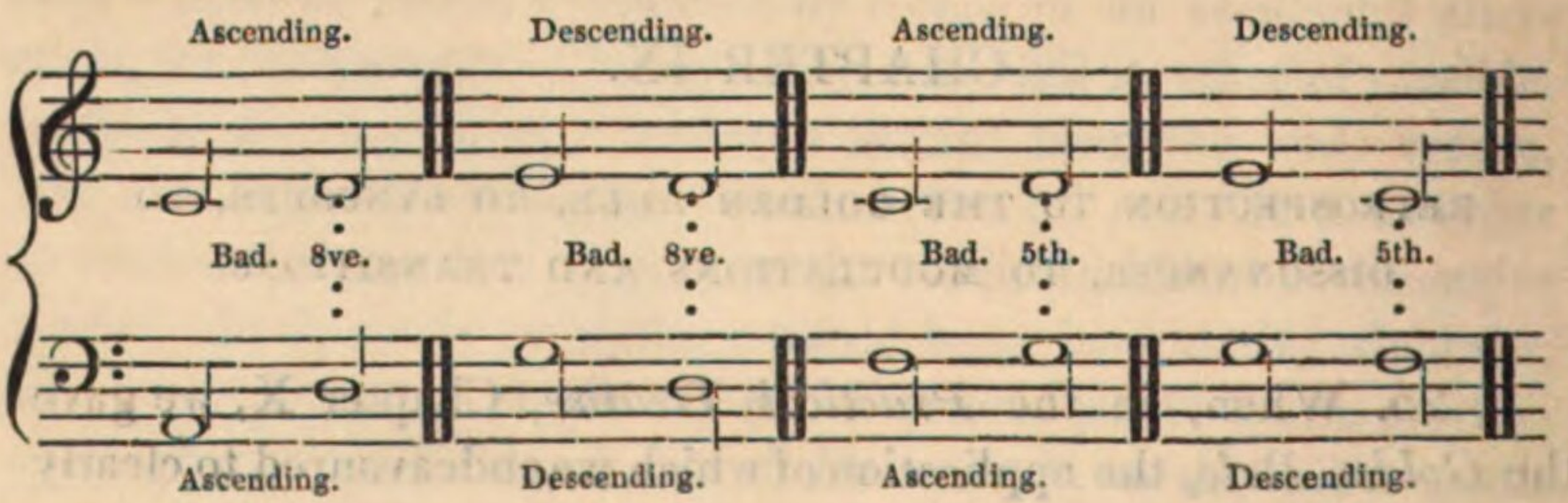
The following example refers to the example in letters, p. 152:



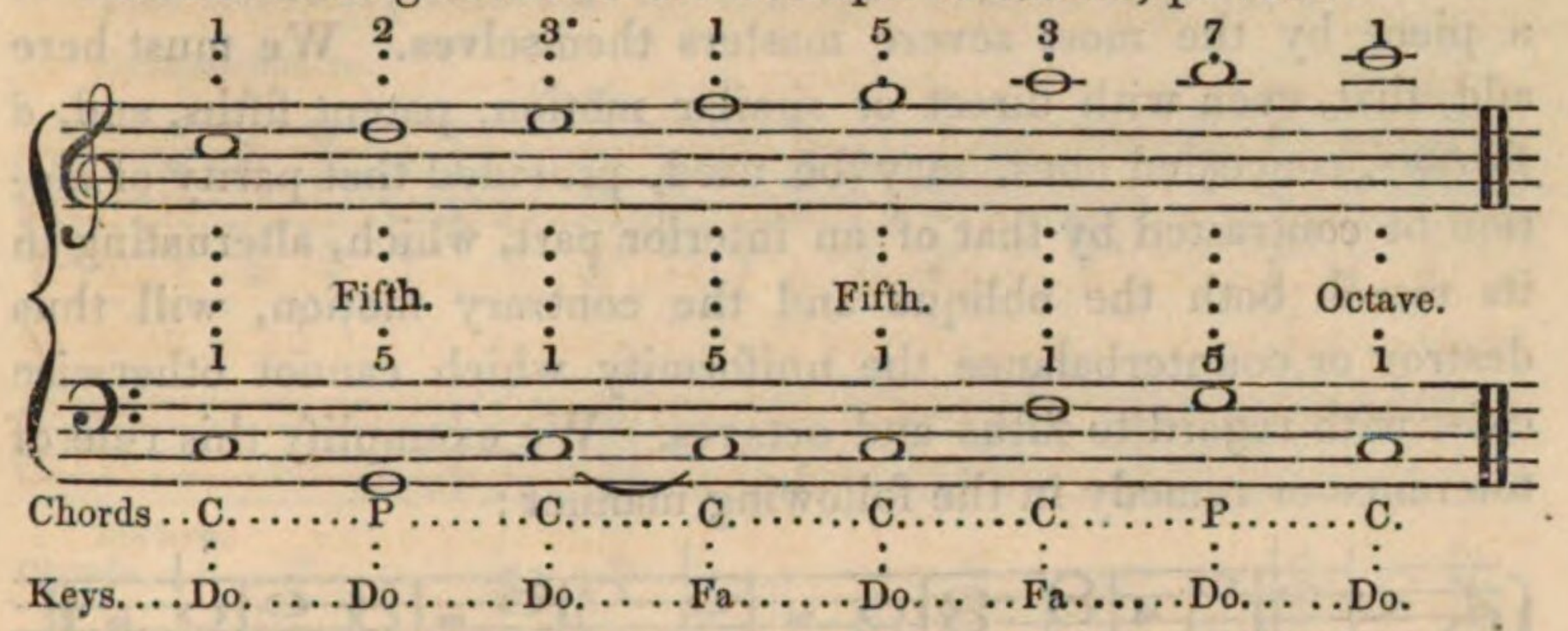
The following refers to the first example in letters, p. 153:



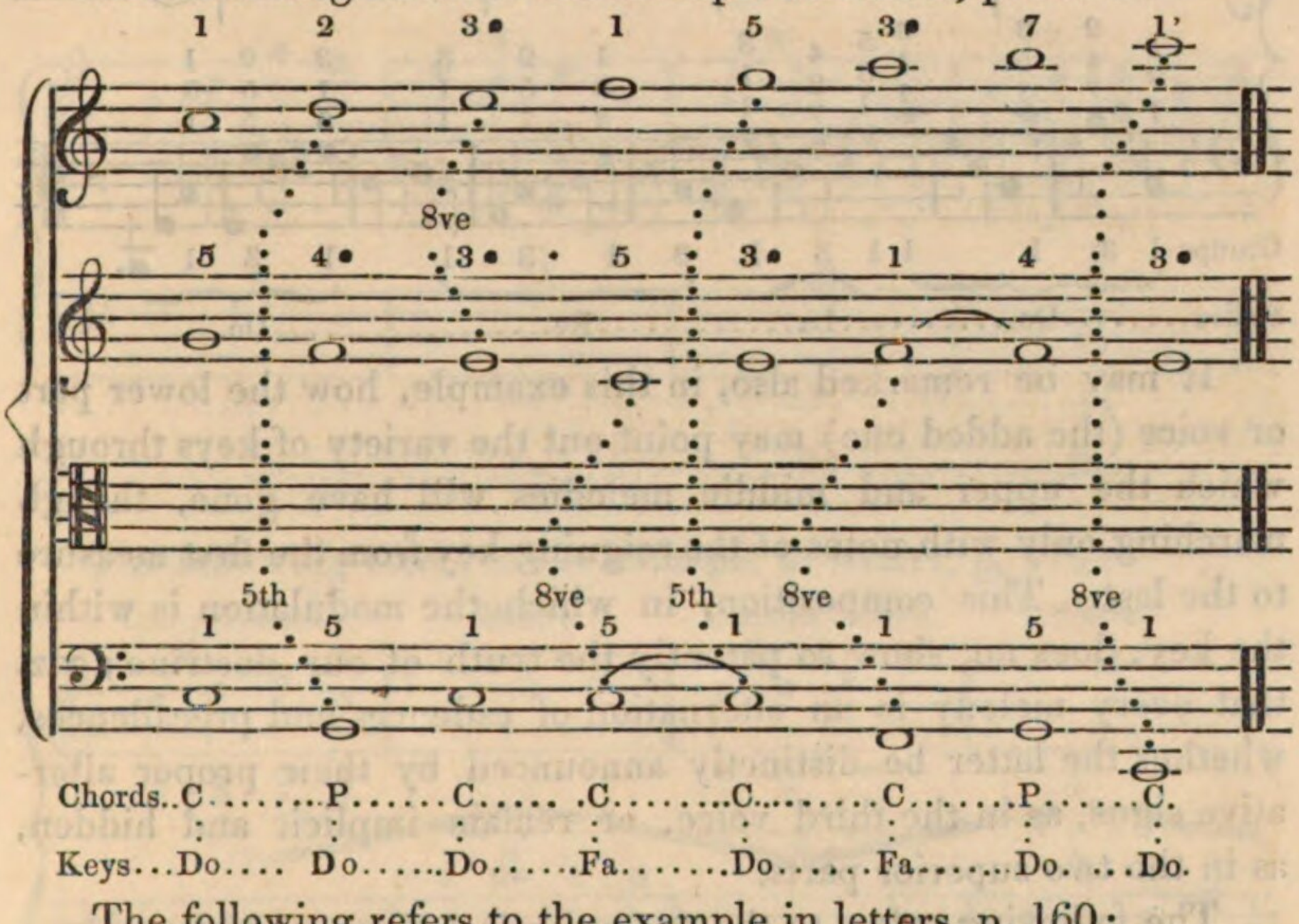
The following refers to the second example in letters, p. 153:



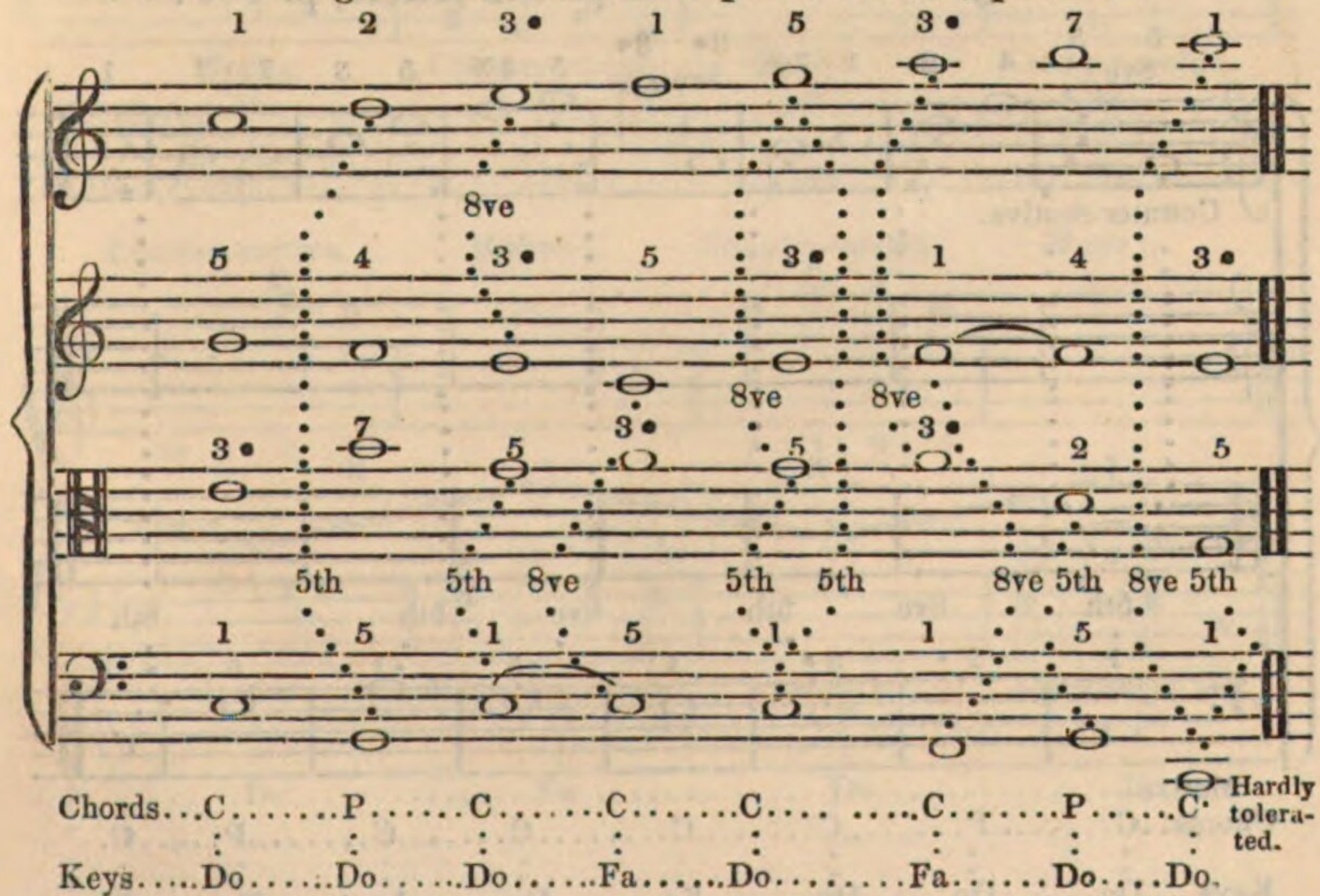
The following refers to the example in letters, p. 155:



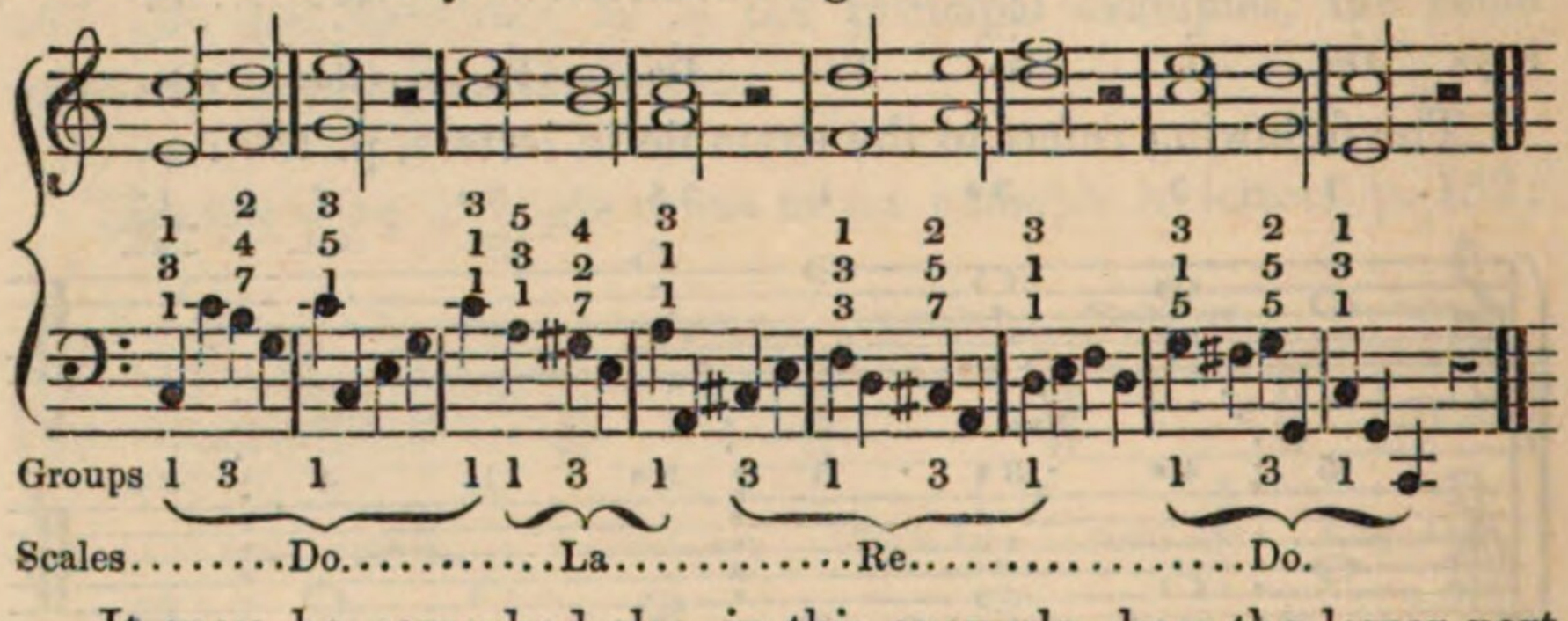
The following refers to the example in letters, p. 157:



The following refers to the example in letters, p. 160:

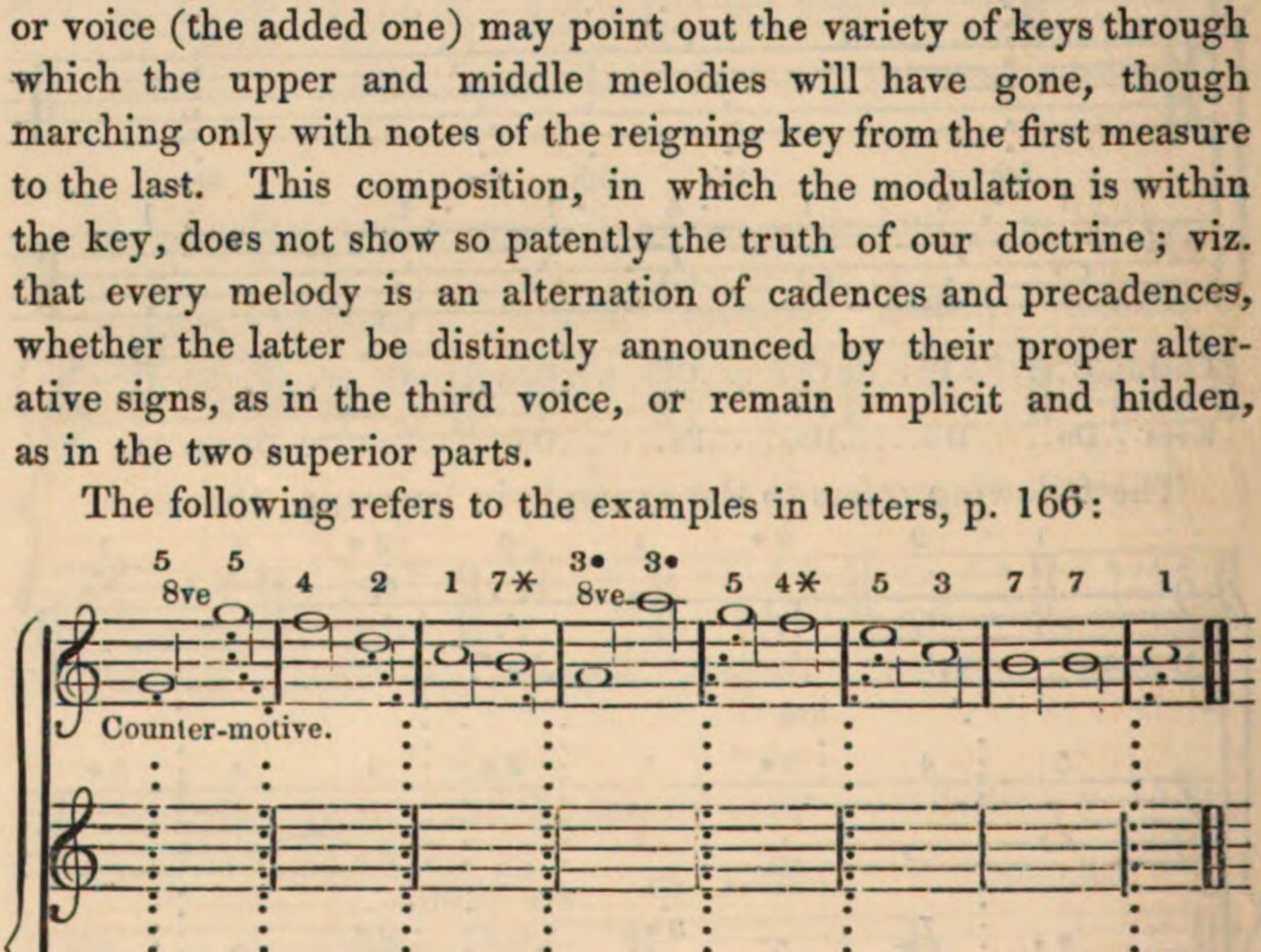


We have just seen, in the preceding example, how the cadence of *Fa* was resorted to, instead of that of *Re*, for the purpose of avoiding a bad fifth; and why a bad fifth is tolerated in the last bar of a piece by the most severe masters themselves. We must here add, that, even with direct or similar motion, patent fifths, and, *à fortiori*, concealed ones, may be used, provided that parity of motion be contrasted by that of an interior part, which, alternating in its march both the oblique and the contrary motion, will thus destroy or counterbalance the uniformity which cannot otherwise exist with regard to fifths and octaves. We exemplify this rule of tolerance or remedy in the following manner:

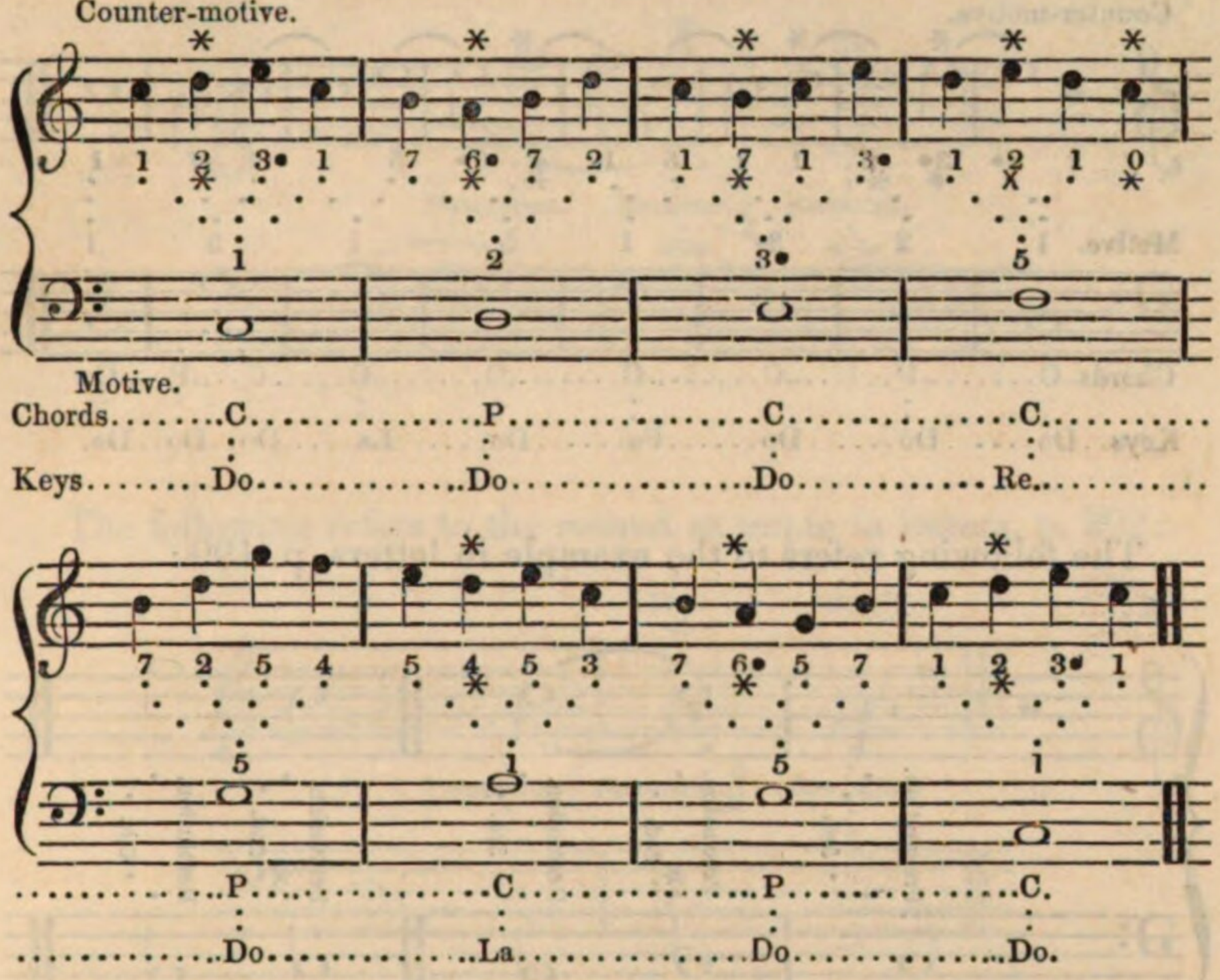


It may be remarked also, in this example, how the lower part or voice (the added one) may point out the variety of keys through which the upper and middle melodies will have gone, though marching only with notes of the reigning key from the first measure to the last. This composition, in which the modulation is within the key, does not show so patently the truth of our doctrine; viz. that every melody is an alternation of cadences and precadences, whether the latter be distinctly announced by their proper alterative signs, as in the third voice, or remain implicit and hidden, as in the two superior parts.

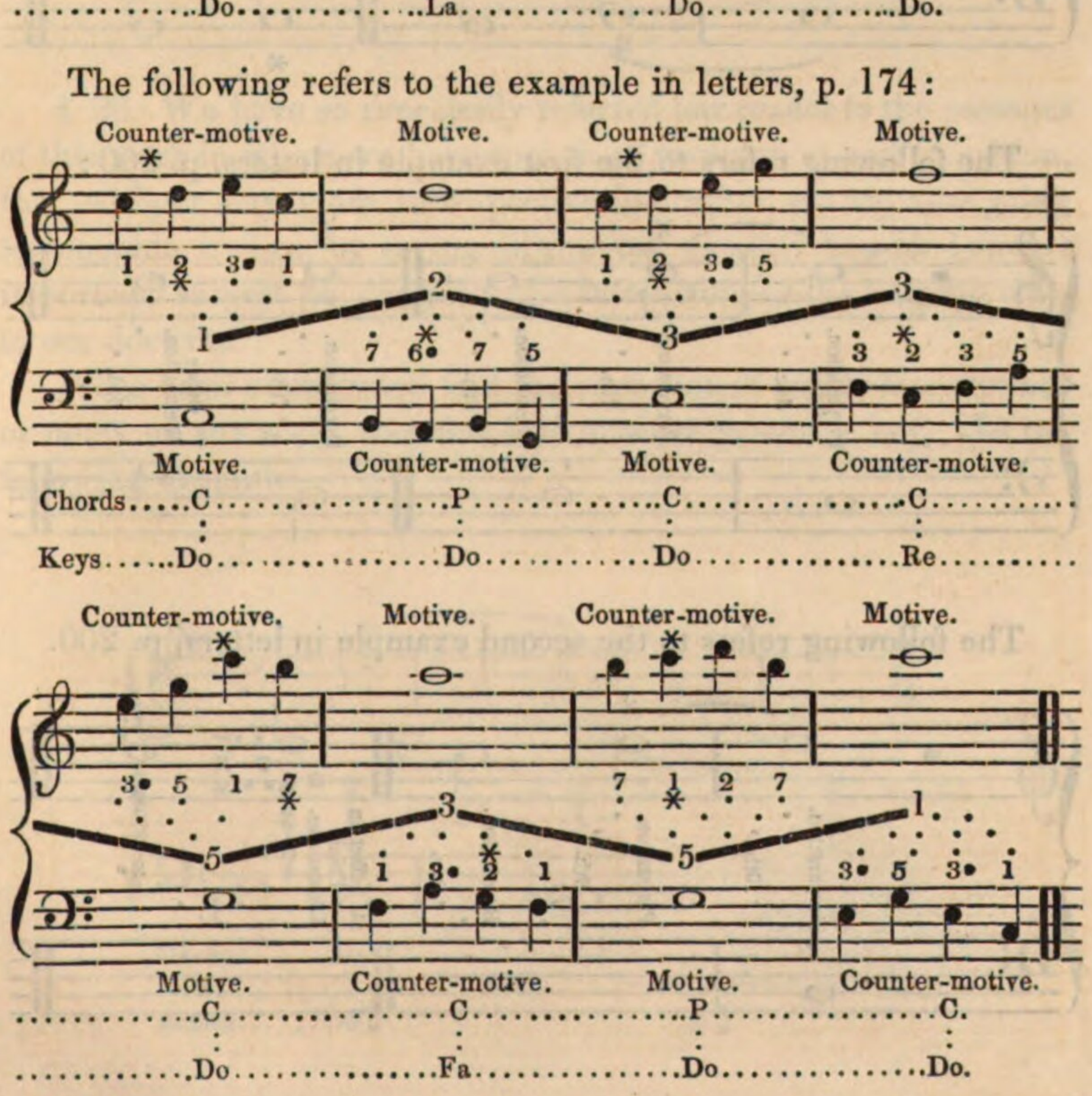
The following refers to the examples in letters, p. 166:



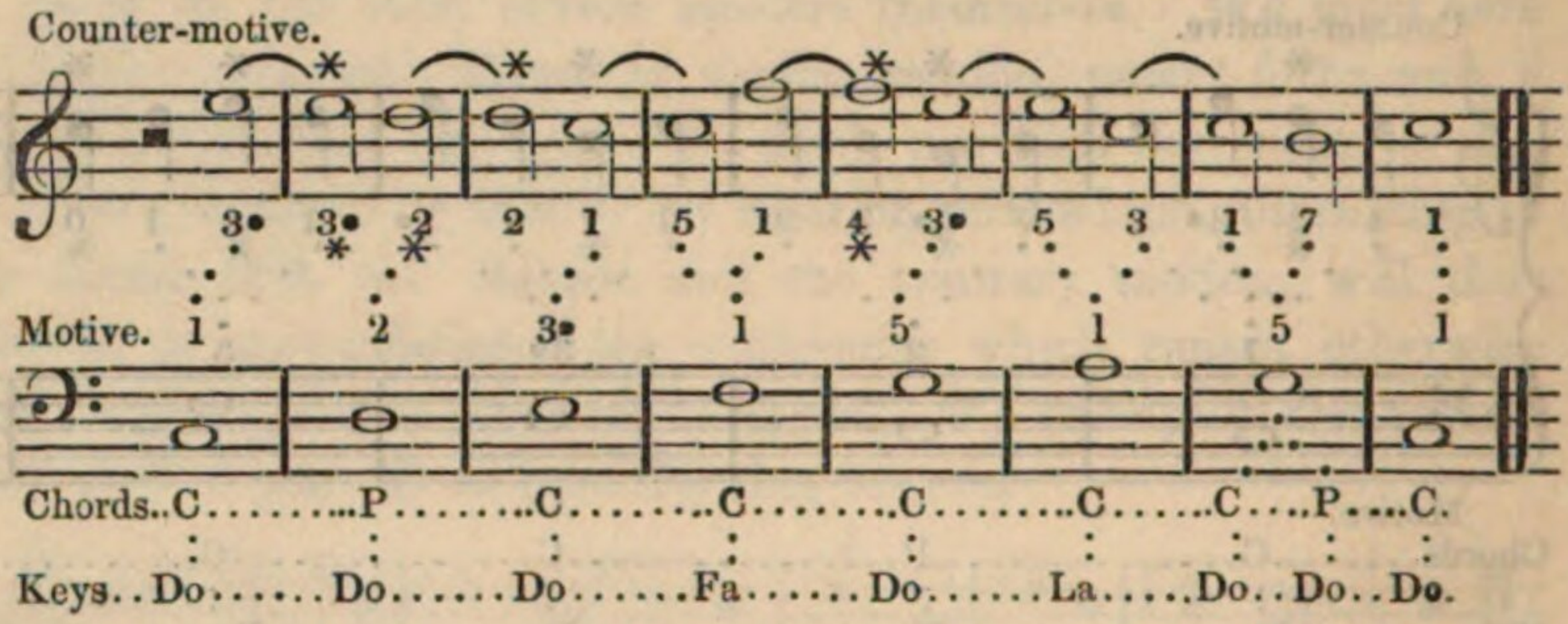
The following refers to the example in letters, p. 171:



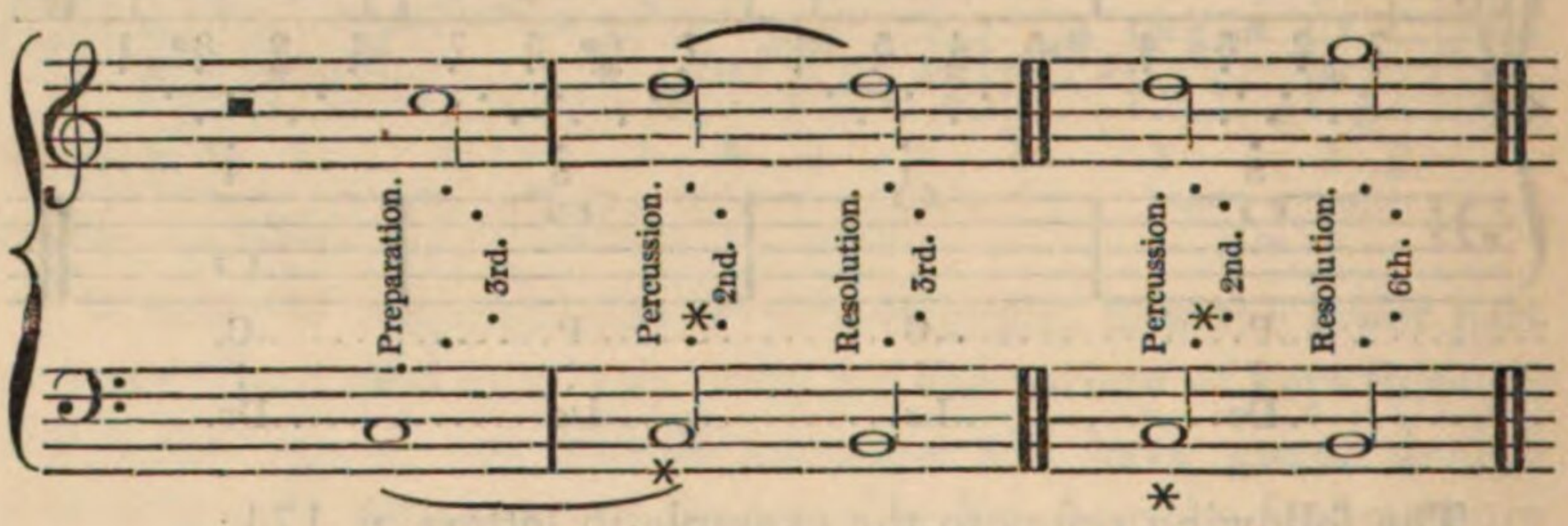
The following refers to the example in letters, p. 174:



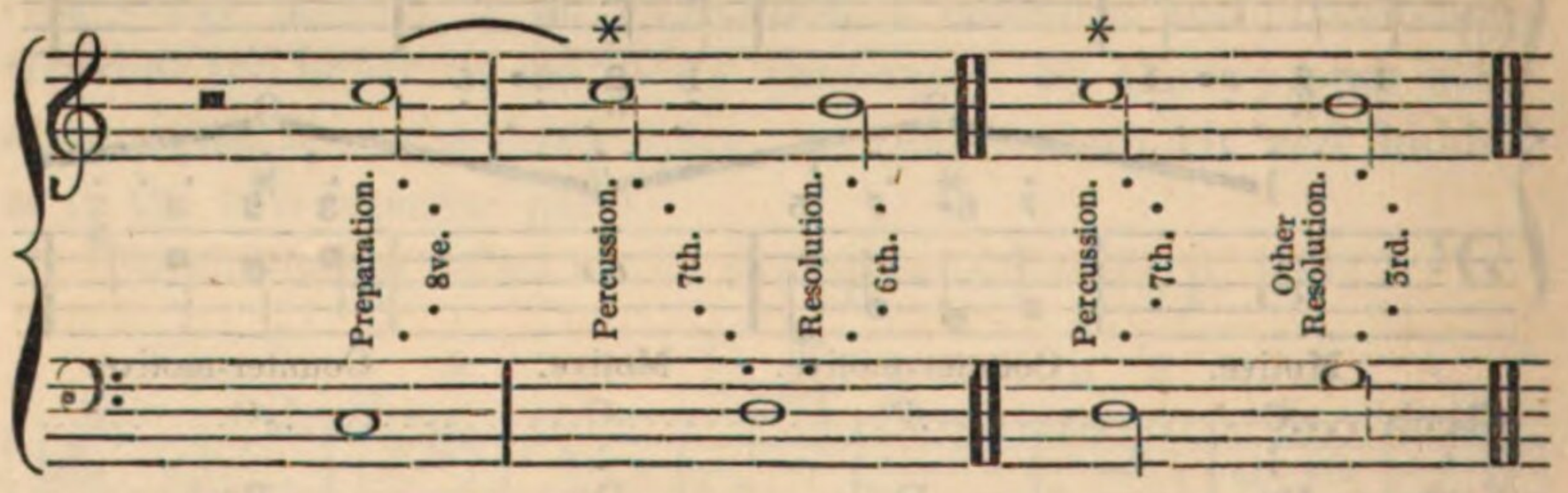
The following refers to the example in letters, p. 178:



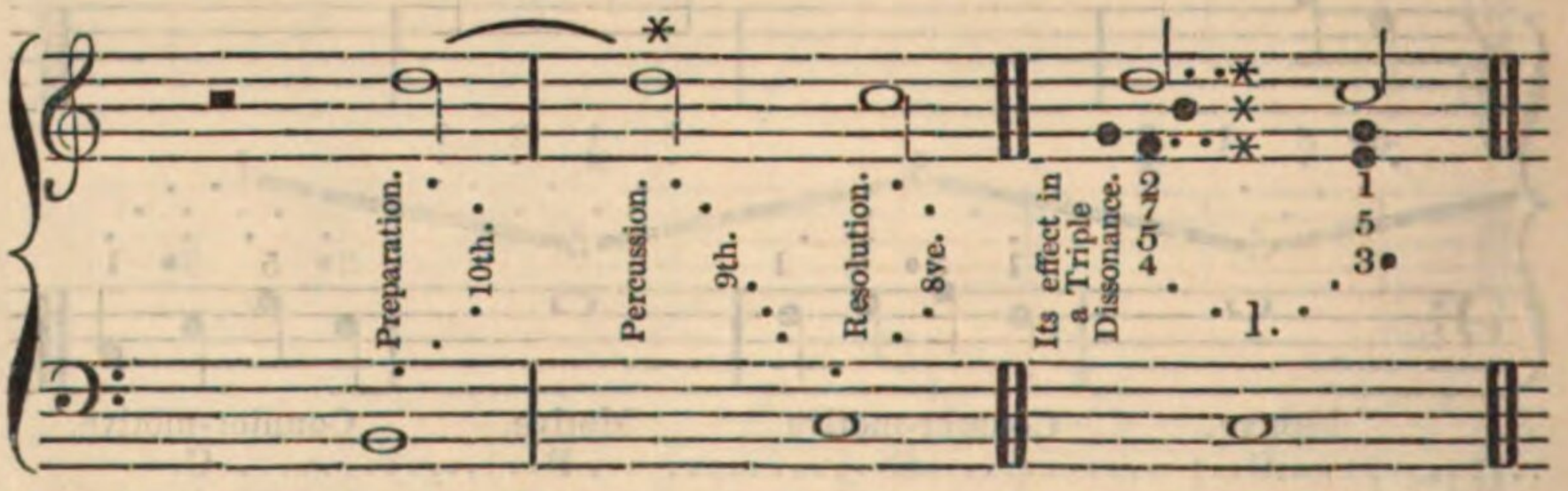
The following refers to the example in letters, p. 199:



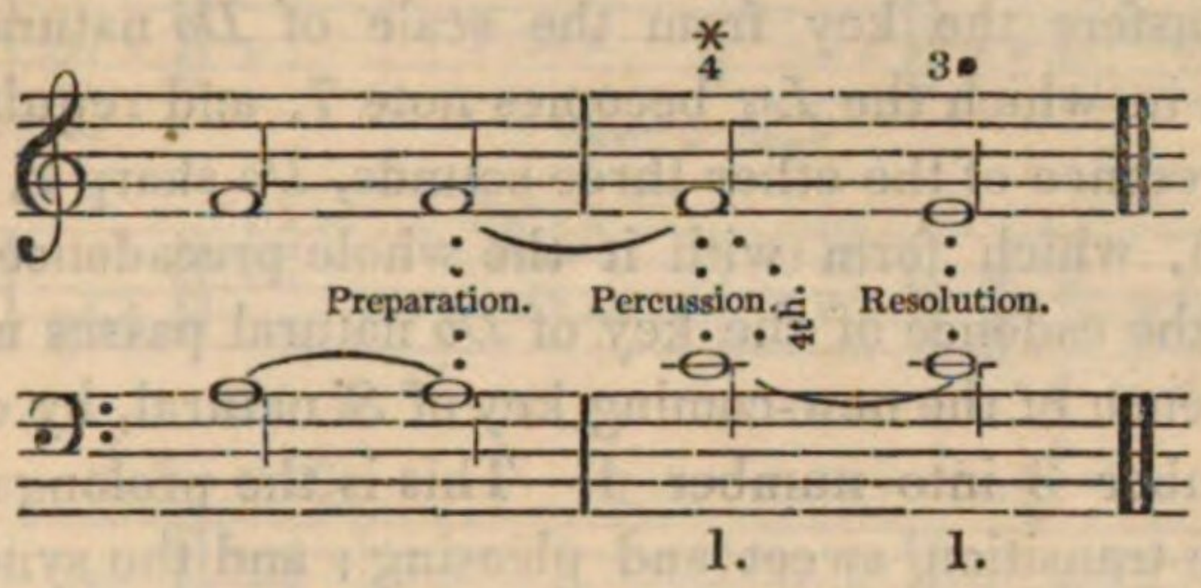
The following refers to the first example in letters, p. 200:



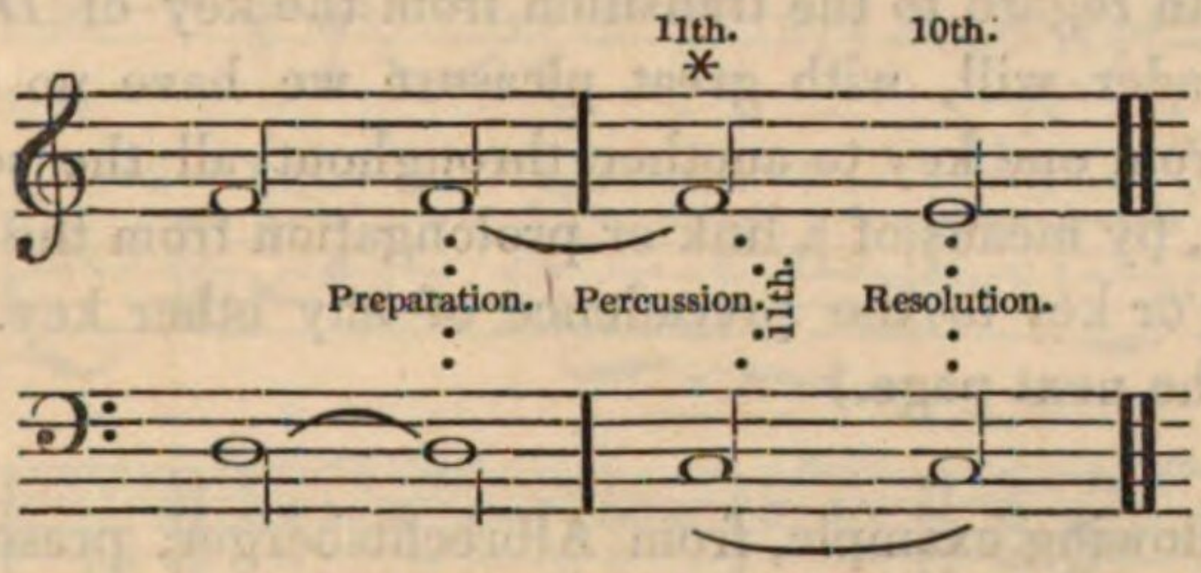
The following refers to the second example in letters, p. 200.



The following refers to the first example in letters, p. 202:

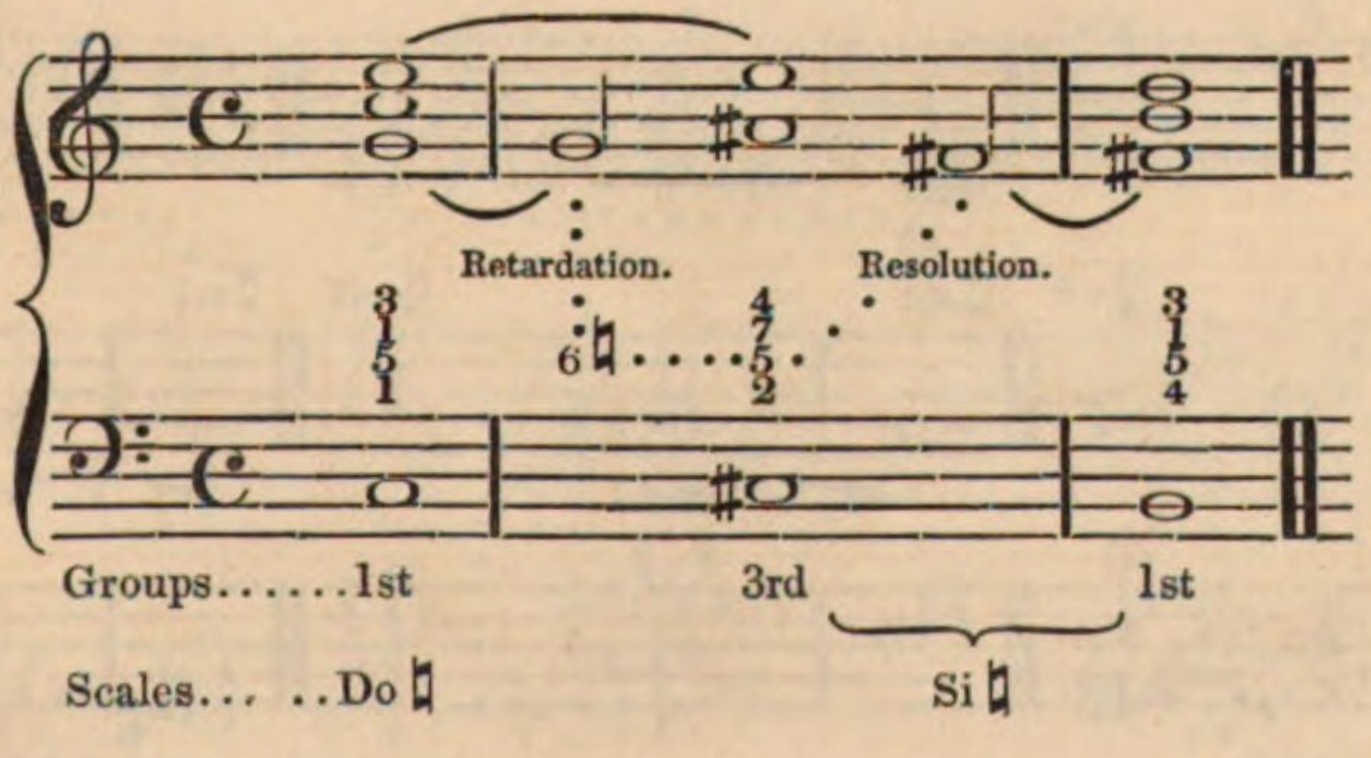


The following refers to the second example in letters, p. 202:



§ 26. We have so repeatedly referred our reader to the passages of this work in which we have spoken of modulation and transition, that, without any more retrospective indication, we are now going to conclude at once, by saying all that can possibly be added on this important subject to complete the instruction of the new converts to our doctrine.

It has been often stated that the alteration of one or more sounds or notes of any scale, transfers it to another gamut or key. In the following example—



the *La*, 6 of the key of *Do*, receives a sharp: this accident immediately transfers the key from the scale of *Do* natural to that of *Si* natural, in which the *La* becomes note 7, and requires the immediate presence of the other three sounds, *Do* sharp 2, *Mi* 4, and *Fa* sharp 5, which form with it the whole precadence. The *Mi* natural of the cadence of the key of *Do* natural passes unaltered to the precadence of the new-coming key of *Si* natural, by only changing its number 3 into number 4. This is the prolongation which renders the transition sweet and pleasing; and the syncope of the note *Sol* has no other effect than that of pleasantly retarding the *Fa* sharp, 5, which completes the precadence of *Si* natural.

What we have just explained in the preceding lines and examples, with regard to the transition from the key of *Do* to that of *Si*, our reader will, with great pleasure we have no doubt, find executed from one key to another throughout all the scales of the two modes, by means of a link or prolongation from the cadence of any gamut or key to the precadence of any other key. (See the Table on the next page.)

The following example, from Albrechtsberger, presents a modulation through several intermediate chords of useless amplification:

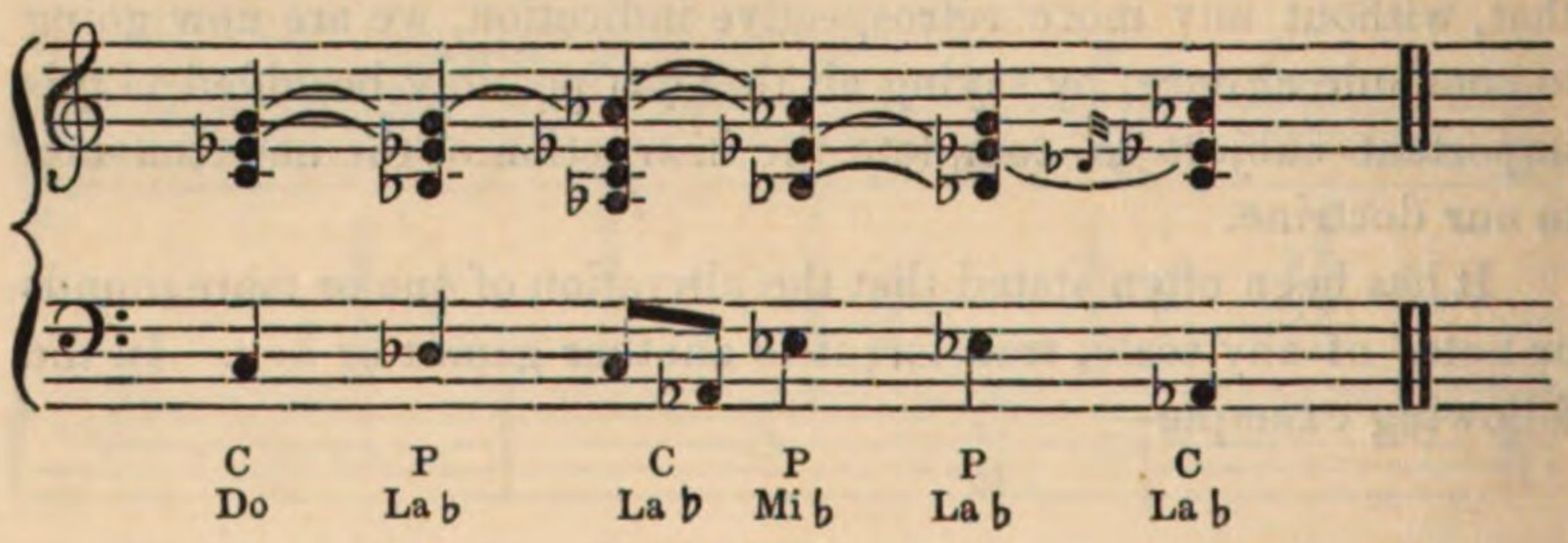
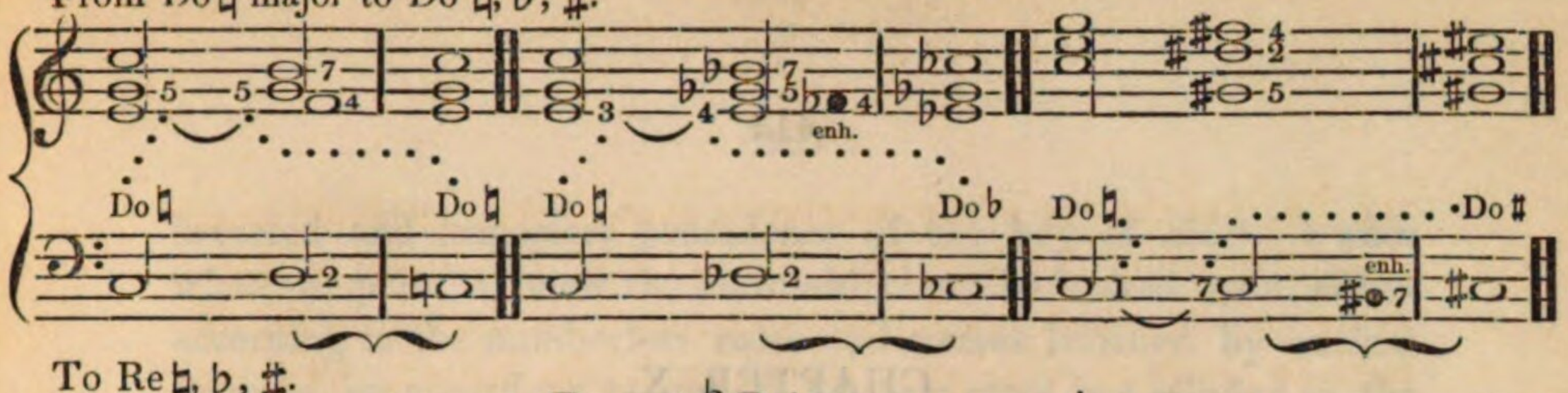
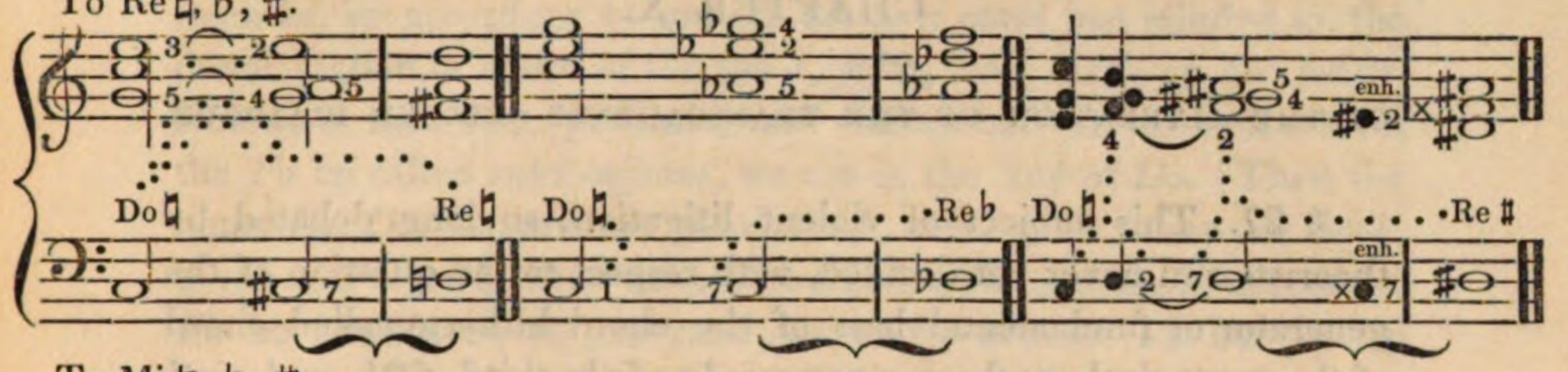


TABLE *of Transitions from one Key to all the others.*

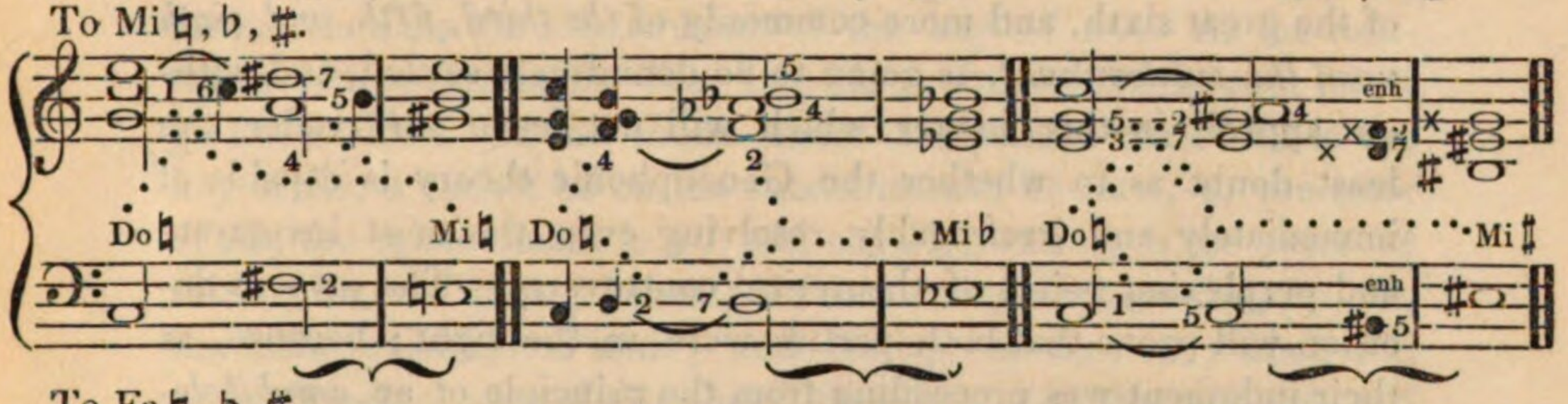
From Do ♮ major to Do ♮, ♭, ♯.



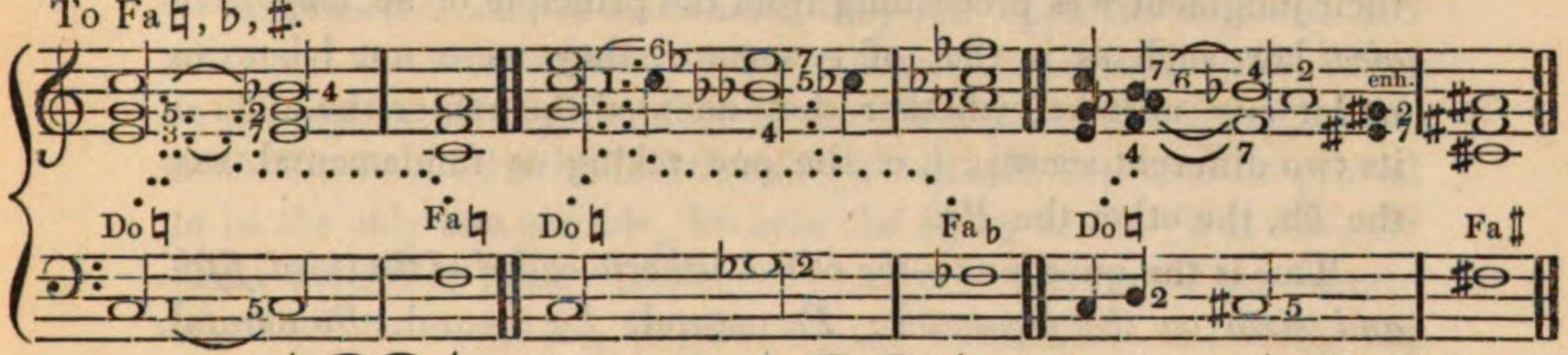
To Re ♮, ♭, ♯.



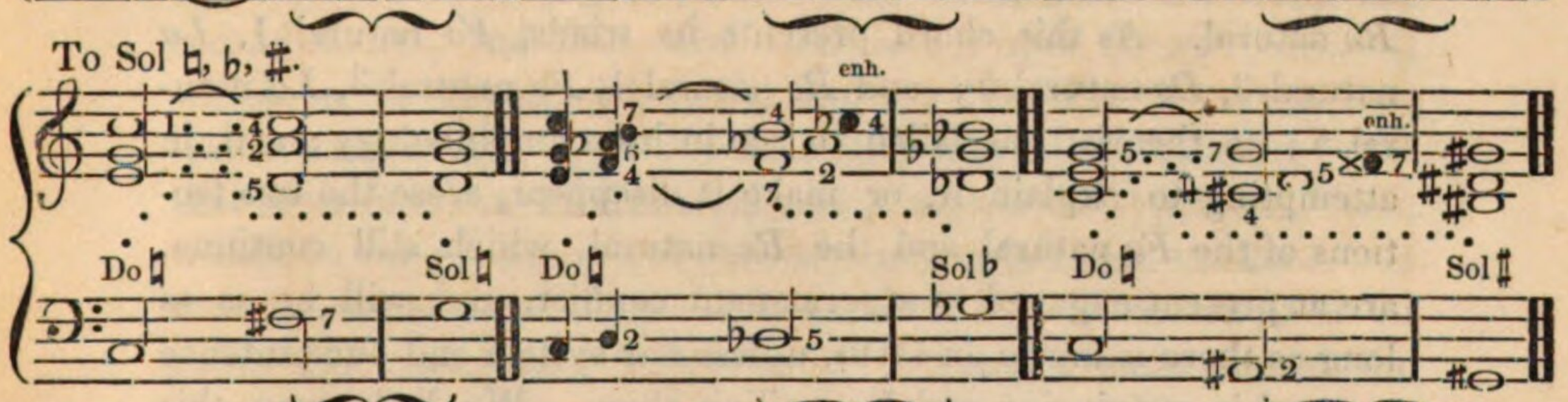
To Mi ♮, ♭, ♯.



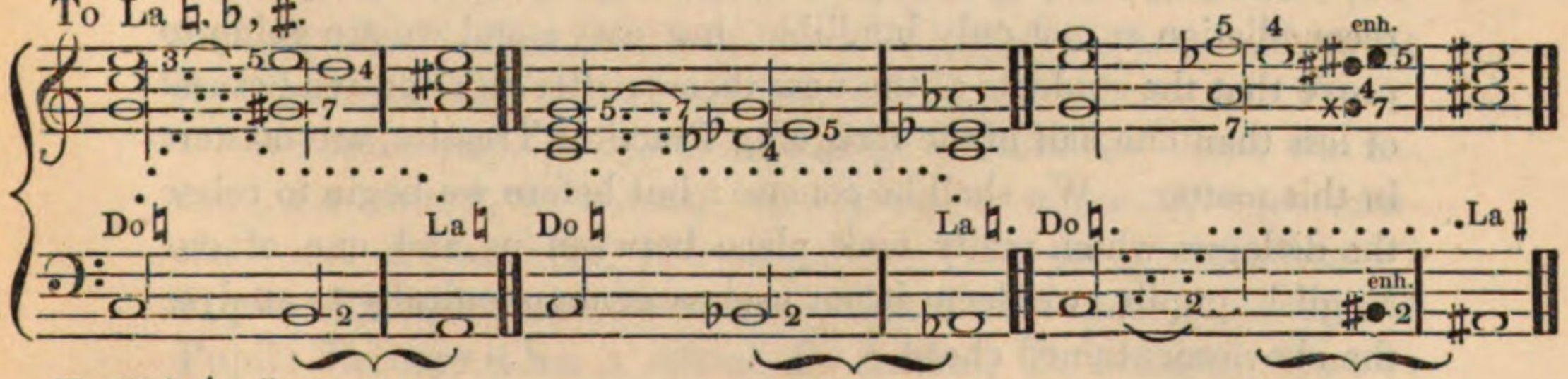
To Fa ♮, ♭, ♯.



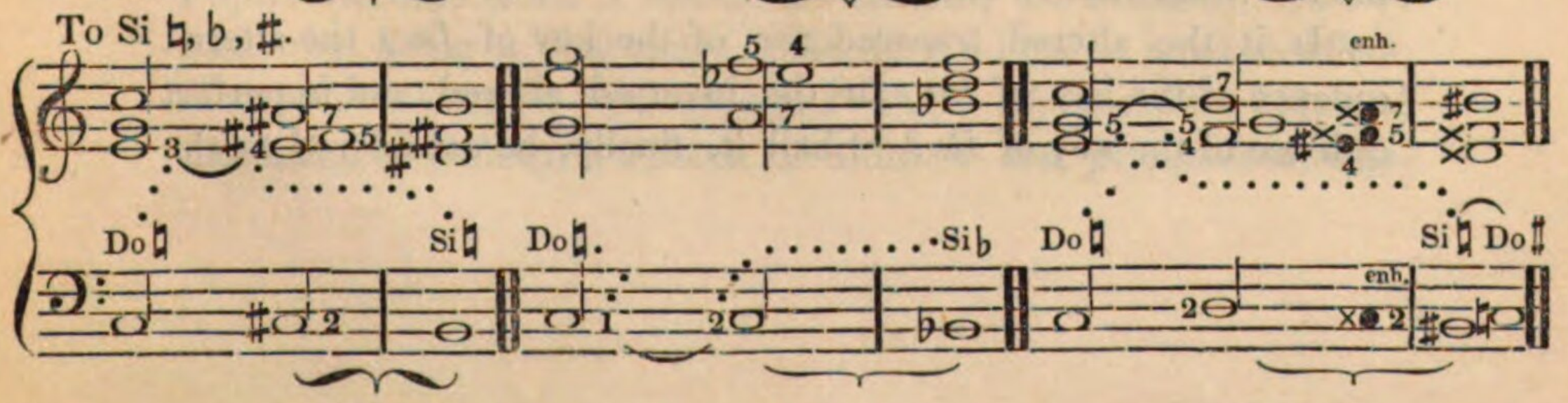
To Sol ♮, ♭, ♯.



To La ♮, ♭, ♯.



To Si ♮, ♭, ♯.



CHAPTER X.

OF THE ALTERATION OF THE TRANSCADENCE—SECOND DIALOGUE.

§ 27. This subject of violent litigation, so long debated by theorists and never yet decided, with respect to the question of the generator or fundamental bass of the chord hitherto called chord of the great sixth, and more commonly of *the third, fifth, and sixth upon the subdominant,* is going to be definitively settled, and without appeal, in this chapter, which will not leave our reader the least doubt as to whether the Geneuphonic theory is capable of immediately and irrefragably resolving even the most inveterate and perplexing points of theoretical controversy. The present decision will prove that both parties were in the right; because, as their judgment was proceeding from the principle of an *amphibological* law, such as is that of resonance, they were not labouring under any mistake, whether they adopted the one or the other of its two different senses; i. e. the one taking as fundamental bass the *Fa,* the other the *Re.*

This is the question:—*the chord hitherto called of the third, fifth, and sixth on the dominant: Fa* natural, *La* natural, *Do* natural, *Re* natural. As this chord presents its triads, *Fa* natural 1, *La* natural 3, *Do* natural 5; and *Re* natural 1, *Fa* natural 3, *La* natural 5; no theorist has failed to see in it an amphibology; and, in attempting to explain it, or make it disappear, arose the two factions of the *Fa* natural and the *Re* natural, which still continue, are at present engaged in a permanent conflict, and will be so as long as there is music on earth, unless our system and our sentence succeed in convincing and reconciling them. We look upon this reconciliation as not only infallible, but easy; and we are going to prove that the students of the new theory, after an attentive perusal of less than one half of the foregoing Practical Treatise, are masters in this matter. We shall be concise: but before we begin to relate the dialogue which really took place between us and one of our English pupils, we deem it not useless geneuphonically to analyse the above-mentioned chord.

Is it the altered transcadence of the key of *Do;* the altered cadence of the key of *Fa;* or the inverted, altered, and imperfect cadence of the key of *Re?* Shall it, finally, be considered as the

inverted and imperfect precadence of the key of *Sol?* Under whatever point of view the aforesaid chord be looked upon, either according to the numberless rules and names lavished by ancient theories, or according to one of the four cases just alluded to, the denomination of chord of the *third, fifth, and sixth of the subdominant* is incorrect, pedantic, and ridiculous. In the first case, if the *Fa* be called *subdominant,* we are in the key of *Do.* Then the notes *La, Do, Re,* are not third, fifth, and sixth; they are sixth, tonic, and second: they cannot be third, fifth, and sixth, unless the *Fa* be considered as generator, as tonic, as note 1; but by no means, then, as the subdominant of the key of *Do.* As the refutation with regard to the first case does also for the second, let us go to the third. If the chord under analysis be attributed to the key of *Re,* it cannot be on the subdominant; because, in the scale of *Re,* the subdominant is *Sol,* and not *Fa;* and it is no more of third, fifth, and sixth; because, in that scale, the notes *La, Do, Re,* are fifth, seventh, and tonic; and resting, as they are, upon *Fa,* as fundamental note of this chord, they rest upon the *mediant,* and not upon the *subdominant* of the old school. Mark, besides, that in the gamut of *Re,* the *Fa* and the *Do* must have a sharp, which is absent here. In the fourth case (which will hereafter be proved to be the only one eligible, because the sharp to the *Fa* is the only thing wanted to render this chord the perfect inverted precadence of *Sol*), the notes *La, Do, Re,* are not third, fifth, and sixth, but second, fourth, and fifth; and they are not upon the subdominant, which, in the key of *Sol,* is *Do,* and not *Fa.* They are therefore, in this case, resting upon the seventh, bereft of its accident; and that seventh is the fundamental note, but not the typometric bass, which, in the precadence of *Sol,* cannot be other than the *Re* 5. It remains, we hope, evidently demonstrated, that in no shape at all could the chord now before us be reasonably denominated the chord of *third, fifth, and sixth on the subdominant.* After these preliminary observations, we may, more profitably for our readers, let them hear the above-promised dialogue.

We ask a pupil of the Geneuphony whether the chord *Fa* natural, *La* natural, *Do* natural, *Re* natural, is *cadencial* or *precadencial?* and he answers, *precadencial.* Why is it precadencial? Pupil: Because it is dissonant. Master: Why is it dissonant? Pupil: Because it has a *second Do* natural, *Re* natural. Master: And why, being a dissonance, does it produce so good an effect, that it serves even for *transcadence?* Pupil: Because every musical succession or melody is a chain of *cadences* and *precadences,* whe-

ther complete or incomplete, or altered. Master: And what *precadence* does this chord—*Fa* natural, *La* natural, *Do* natural, *Re* natural—present? Pupil: It is obvious that it is that of the key of *Sol*. Master: Wherefore? Pupil: Because it contains the *second Do* natural, *Re* natural, which, like every *second*, presents the numbers 4 and 5. Master: And with what numbers will the whole chord be cyphered? Pupil: With these—*Fa* natural 7*, *La* natural 2, *Do* natural 4, *Re* natural 5. Master: And what certainty have you that this chord, the *Fa* of which is natural, belongs to the key of *Sol*, in which the *Fa* must be sharp? Pupil: Because we know that the *syllabic* names of notes always bear the same number in each of the six keys of the same syllabic tonic, whether the said notes be sharp, natural, or flat; and it is clear that, in the six keys of *Sol*, the note 7 is always *Fa*. Master: You are perfectly right; but, nevertheless, difficulties still remain to be explained. Let us proceed. What typometric bass do you give to this chord? Pupil: The *Fa* natural, if I consider it as altered transcadence of *Do*. Master: How can that be, when you have just told me yourself that this chord is the *precadence* of *Sol*, and that, in fact, the typometric bass of the *precadence* of *Sol* is the *Re*, and not the *Fa*? Pupil: Because, in the different chords of one same key, and, *à fortiori*, in the chords of distinct keys, the notes of the typometric bass must be different. But permit me, sir, to ask why you question me about the typometric bass, when you have just told me that the subject of the old quarrel is about the fundamental bass of the very chord that stands before us, in order to determine whether that fundamental bass is *Fa* or *Re*? Master: The reason of my having named the typometric in preference to the fundamental bass, is, that the typometric bass is most often the same as the fundamental. Pupil: I know it is, sir; but often also they are different. Master: Could you explain to me why and when they are different? Pupil: The typometric bass proceeds from melody: it follows and accompanies the song, chant, or air. The fundamental bass, on the contrary, proceeds from harmony: it is only fundamental when it is not at once typometric and fundamental; and it cannot be fundamental except in a chord of another scale than that of the established key. Hence the gravest note of the various inversions of any of the three groups has been generally (sometimes, however, wrongfully) called the fundamental of that inverted chord. I shall explain: the *typometric* melody (in the key of *Do*, for instance) has its three rests, or *cadences*, or phrases, in *Do*, in *Fa*, and in *Sol*: in *Do—Do, Mi, Sol*; in *Fa—Fa, La, Do;*

and in *Sol—Sol, Si, Re.* These three *cadences* reciprocally discharge towards one another the office of *precadences*, in the following order: the *cadence* of *Sol* presents, as *precadence* of *Do*, its notes *Sol, Si, Re*, with its numbers 5, 7, 2. The cadence of *Do* presents, as precadence of *Fa*, its three notes *Do, Mi, Sol*, with its numbers 5, 7, 2. The transcadence of *Do* presents, as *precadence* of *Sol*, its notes *Fa, La, Do*, with its numbers 7*, 2, 4. It is clear that the *typometric* melody proceeds by emitted *cadences* and *hidden* or implied *precadences*, which are the same as *incomplete*. On the contrary, the complete *precadencial* harmony necessarily consists of *four* distinct notes, and not of *three*, as in the pure *cadencial* harmony. Hence it happens that if the three notes of the grand trisson, *Sol, Do, Fa*, be considered as generating sounds of as many precadencial chords, each of them shall be the note of the typometric bass of the precadence of the key to which the said precadence will belong; but if the three notes of the trisson be made to belong to one and the same key, one of them only will be typometric as precadence, whilst the other two (being typometric as precadencial in other keys) will be typometric only as generators of cadence and transcadence. The chords generated by the notes of the trisson just mentioned will be *Sol* natural, *Si* natural, *Re* natural, *Fa* natural (which is the complete neutral *precadence* of *Do* natural); *Do* natural, *Mi* natural, *Sol* natural, *Si* flat (which is the complete neutral *precadence* of *Fa* natural); and *Fa* natural, *La* natural, *Do* natural, *Mi* flat (which is also the complete neutral *precadence* of *Si* flat). Whence it is clearly seen that the *Fa*, taken as fundamental or generating bass, becomes, *ipso facto*, precadencial, and produces a new gamut, in which it becomes also typometric, producing then a melody entirely distinct from that which it supports as typometric transcadencial bass. The plain inference from these facts is, that, as the chord *Fa* natural, *La* natural, *Do* natural, *Re* natural, may be viewed and used, the *Fa* or the *Re* will be either the typometric or fundamental bass. If the chord be used as the altered transcadence of *Do*, the *Fa* is not 4, and typometric bass: if the chord (whilst the key of *Do* is reigning) be used as the altered cadence of *Fa*, then the *Fa*, transitorily note 1, is the fundamental bass: but if the chord, after the emission of a *Si* flat, become in reality the altered cadence of the key of *Fa*, now reigning, then the *Fa* becomes again the typometric bass (as a permanent note); but is so of the cadence of *Fa*, instead of being so, as before, of the transcadence of *Do*. Let us now come to the *Re*. If the chord be used as the inverted and imperfect precadence of the key of *Sol*,

then the *Re*, notwithstanding the imperfection caused by the want of a sharp at the *Fa*, will be the typometric bass, as note 5 of that precadence: but if the chord (whilst the key of *Sol* or that of *Do* is reigning) be used as an inverted, altered, and imperfect cadence of the key of *Re*, transitorily resorted to, then the *Re* will be its fundamental bass. Master: But why are the *Fa* and the *Re*, though occasionally varying in both their character and office, now typometric and then fundamental bass,—why, I say, are they confounded in this chord, and, if I may express myself thus, identified as it were in the ear? Pupil: Because this chord, like all the others, is one of the alterations or *destructions* of the harmonic root, which, as you have taught me, is the only generating principle by which they are all produced. Master: Can you tell me at once by what destruction of the harmonic root this chord is generated? Pupil: Certainly, sir; by the following:

Harmonic Root.	Destruction.	Reproduction.
2 Re ♮	stationary	Re ♮ 5
7 Si ♮	ascends a semitone	Do ♮ 4
6 La ♭	ascends a semitone	La ♮ 2
4 Fa ♮	stationary	Fa ♮ 7*

Chords, H. R. ... ... Neutral Precadence.
Keys... Do... ... ... Sol ♮.

It is clear that this operation is precisely the same that you have taught us in one of your lessons of counterpoint, in which you have demonstrated that, by raising or lowering one or more notes of the harmonic root, we obtain all the precadencial (i. e. dissonant) chords used in music. I had not, therefore, far to go to find the explanation which I have just given you. I had only to decompose the chord by reducing it to the harmonic root: and it strikes me that I have not erred, since I have not altered the minor third, *Re* natural, *Fa* natural, and that I have consequently proved that the cause which renders the precadence of *Sol* incomplete, is the want of the dissonant major third, *Re* natural, *Fa* sharp—a want not compensated for by the other major third, *Fa* natural, *La* natural, also dissonant; because it is less than the major third, *Re* natural, *Fa* sharp, in consequence of its not being supported, like the latter, upon the tonic *Re*, *precadencial* typometric bass of *Sol*, but only upon the tonic *Fa*, which is merely a *precadencial* bass, and this even in another key. I have also proved that the gamical cyphering, combined with the syllabic nomenclature, and always in conformity

with it, is the key that opens all the secrets of music, and that.....

Master: Stop, stop, my dear friend; you have said even more than enough: all that you could add, the reader will anticipate.

Pupil: I thank you, sir, for your great indulgence; and I make a fresh appeal to it, by asking your leave for me still to add a few observations.

Master: I am afraid they will be useless: however, say what you please.

Pupil: When, in the course of this conversation, I stated that the three cadences of every typometer discharge towards each other the function of a precadence, though incomplete, I expected that, after the example which I offered to you of that truth, you would make some remarks, on account of the difference between the precadencial cyphering produced by the transcadence, and the precadencial cyphering resulting from the two other chords. As you remained silent, I feel the necessity of communicating to you my reflections on the subject.

The first two cadences, those of *Sol* and *Do*, present the numbers 5, 7, 2, of the precadences of *Do* and *Fa*, according to the rule, that every *cadence* is the incomplete *precadence* of the fourth of its tonic; and if the cadence of *Fa* presents the numbers 7*, 2, 4, of the key of *Sol*, it is because *Sol* is not the fourth of *Fa*, as *Do* is of *Sol*, and *Fa* of *Do*, but is its second; whilst these notes, *Fa* natural, *La* natural, *Do* natural (7*, 2, 4, of *Sol*, second of *Fa*), are precisely 5, 7, 2, of the key of *Si*, its fourth. Add the missing 4 to this chord, in order to complete this precadence, and you will have a new key produced by *Fa*, considered as fundamental and generating precadencial bass, because the *Mi* flat does not constitute a part of the scale of *Do*, to which the chord in question belongs, as is proved by its name (transcadence of *Do*), *Fa* not being subdominant but in the key of *Do*; whilst, on the contrary, the addition of the precadencial 4 of the key of *Do*, and of that of *Fa* in the cadences of *Sol* and *Do* (viz. *Fa* sharp in the former, *Si* flat in the latter) do not bring any strange sound to the chord under analysis—*Fa*♮, *La*♮, *Do*♮, *Re*♮.

Let us infer, from the foregoing observations, that no typometric bass exists in any key until it be sufficiently established by the successive emission of at least its precadence and its cadence, and that the typometric bass is never composed but of note 1 for the cadence, of note 4 for the transcadence, and of note 5 for the precadence, of the reigning key; because, in transitory modulations—viz. as often as the transition is only begun, but not completed,—the

typometric, thorough, or tonic bass is not required. To them a fundamental bass suffices; which bass will become typometric as soon as those borrowed and modulating chords shall have passed to the rank of constitutive chords of a scale or key completely established. The fundamental bass is that which suits better to the isolated harmony of the chord of which it is the gravest note; at the same time that it forms the best march of melody with the note of the same voice or part that precedes it, and the note that follows it.

The notes 1, 4, and 5, are most often at once both the typometric and the fundamental bass of the typometric groups or chord; whilst the fundamental bass is that which is typometric in any other key but the reigning one, as well as in different groups. This is the case in the chord that has given rise to this dialogue, a chord in which the *Re* is the fundamental bass as long as the presence of the *Fa* natural lets it belong to the key of *Do:* whilst it would become a typometric bass the moment the application of a sharp to the *Fa* would make this chord enter into the key of *Sol.* On the contrary, the *Fa* is the typometric bass of the same chord, because it is the tonic bass of *Fa,* transcadence of the key or *typometer* to which this chord belongs.

Master: Bravo, my young friend! bravo! I am now justified in saying, that, thanks to the sagacity of your intelligence, and the lucidity of your judgment, the long-protracted controversy, the great musical law-suit between the *Re* and the *Fa,* is at an end for ever.

Pupil: Yes, sir, it is at an end; but I have no part at all in the sentence: it is passed, and shall be promulgated as an indestructible law by your theory alone. I feel every day more convinced, as far at least as I can judge, that the Geneuphonic system is without an exception; that it is, like Nature, universal and complete, as are all her productions; and that it is as symmetrical as the two eyes or the two ears of the same head.

CHAPTER XI.

TONISM AND MODISM.

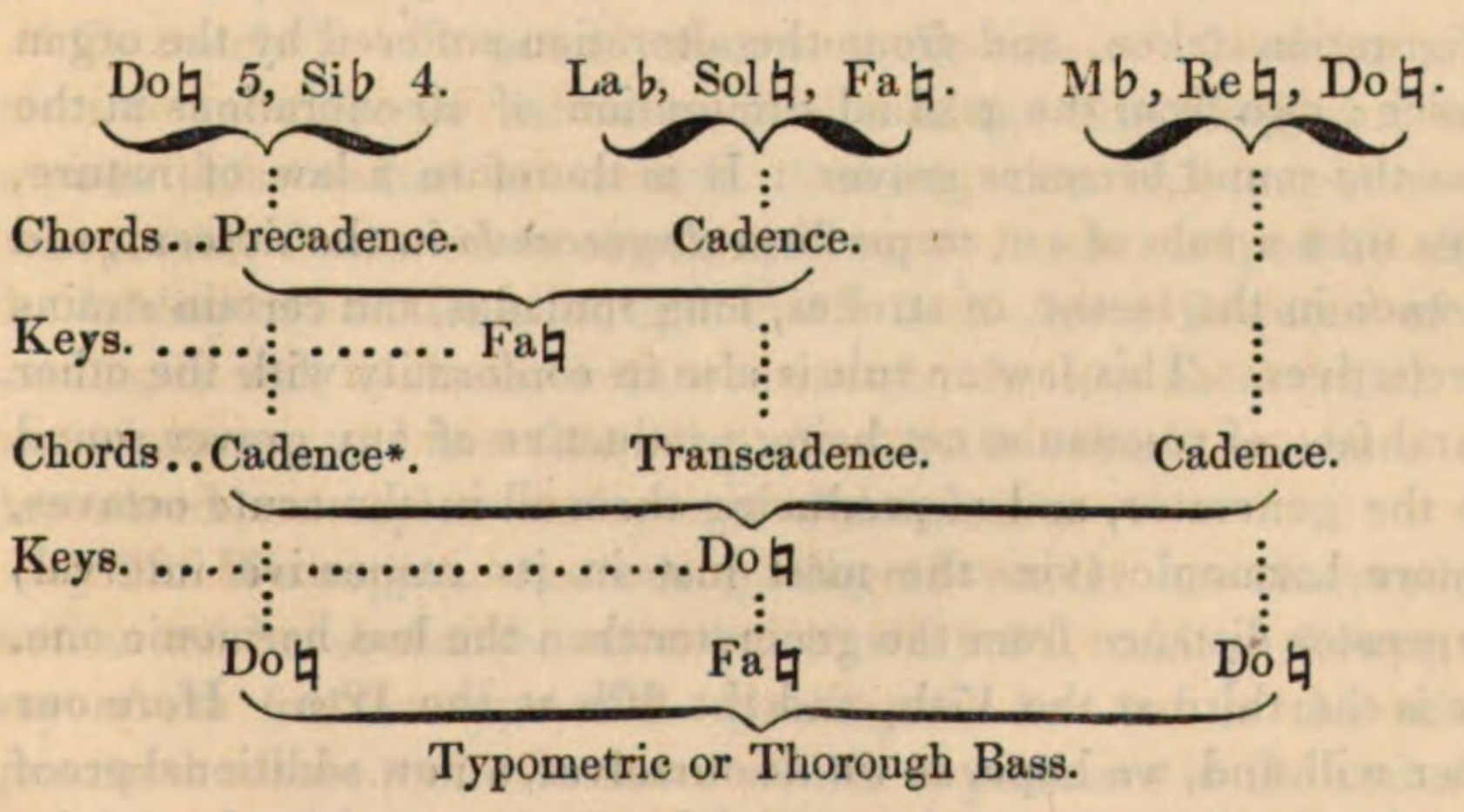
§ 28. *Tonism* and *Modism* are all that is constitutive or characteristic, the former of the key, the latter of the mode. The second 4 and 5, which is the only typometric second of the gamut, is the source, not to say the chaos, from which destruction issues. The destruction which has its egress from the second, is that of musical disorder, viz. that of dissonance. As the destruction of disorder is the restoration of order, so the destruction of dissonance is the production of consonance; in other words, of the tono-modic interval of third, without which there is no perfect melody, and consequently no music. Dissonance, as we said in the *Prolegomena*, § 47, is the dual division of sonorous unity, whether both halves be equal or unequal. Dissonance might also be defined, the utterable sound that is nearest to another utterable sound. We have proved that dissonance or duality of sounds is not euphonic, whilst the two utterable and uttered sounds are distant from each other less than two semitones—viz. one second: whence it follows, as well as from their want of mode, that the supposed *genera* called chromatic and enharmonic cannot be tonogamic, or productive of melody. It is therefore evident that harmonic dissonance, or *concordia discords*, can only be the major second. From the major second, 4—5, every scale of the minor mode is generated, not less than every gamut of the major mode. The former are not less precadencial than the latter; and it is, here, a duty incumbent on us to refute a paralogism diffused through the ancient theories; viz. that the minor scale has no mediant, i. e. no semitone from note 3 to note 4 of the gamut. It is true that no scale of the minor mode has such a semitone: but this fact, far from being an irregularity, is a perfection, and also an argument of both simplicity and unity. Indeed, the semitone from note 3 to note 4, in the key of *Do*, and the same in all the others, is precadencial, and tonic dominant of the key of *Fa* natural. It is, moreover, practically evident that, without the least necessity of such a semitone, the cadence marches naturally and freely, as well in the minor as in the major mode, to the transca-

dence, *Fa, La* flat, *Do.* This is undeniable; and it is not less so, that as soon as the *Mi* flat is raised to *Mi* natural, it appears and acts as note 7 and tonic dominant of the key of *Fa.* The consequence of this is, that the *Mi* flat is a true mediant, which, instead of changing the key, changes the mode within the same scale, by means of the semitone *Mi* flat—*Mi* natural; which shows that, in order to change the key, the first thing to be done is to change the mode (when it is to be changed); and this is what has been demonstrated in the various destructions of the harmonic root. From these premises it is easily deduced that the cadence of the minor mode cannot be constituted an avoided cadence, as the cadence of the major mode can be, by the addition of the note 4 of another scale.

The peculiarities of each cadence must be thoroughly known to the composer; as no warrior ought to make use of his arms without a previous and full knowledge of their reach, of the greater or less sharpness of their edge. The *rhythmic dominant,* as well in the major as in the minor mode, produces the effect of a momentary rest. Nevertheless, we see that the rhythmic dominant, equally with the ear, as superior judge, does not indistinctly tolerate the modic alteration; for, after *Do—Mi* natural, we may utter the modic minor third, *Fa—La* flat; but after *Do—Mi* flat, you cannot emit the major third, *Fa—La* natural. This might, perhaps, be considered as a propensity of nature to relinquish the major mode, equal to its reluctance to abandon the minor one. Let us observe, also, that, in the minor mode, the rhythmic dominant, *Fa* 4, does not in any way disturb the *tonic* domination of the key, note 1; and that, if, immediately after the minor transcadence, *Fa, La* flat, *Do,* it is certain that the ear accepts, in the precadence, the major third, *Sol—Si,* it is not only because in that group the said major third is not modic but is the *tonic dominant,* but also because the *La* flat may be advantageously substituted for the *Sol* natural; and because, moreover, as soon as the clashing of *Sol* natural with *Fa* natural has caused a dissonance, the ear cares very little about that dissonance of second being increased by the accession of its unavoidable companion (*Sol—Si*), almost its twin sister. We see, besides all the positive facts just enumerated, that the ear willingly accepts as many minor thirds as may be offered to it; but, on the contrary, repels and condemns contiguous major thirds, were they but two; and, finally, that the minor mode exists of itself, without its being generated or announced by the precadencial dissonance; because it exclusively possesses a peculiar precadence, which is the

very type and pattern of consonance, and is proper to it alone,—viz. the harmonic root.

We have spoken (in the Elements, Chapter V, § 40, and *note*, page 32) of the objections vainly raised by certain theorists against the leap of the minor third existing in all the scales of the minor mode. The only thing to be answered, is, that such a leap from note 6 to note 7, in all minor gamuts, is in nature; that the interval of minor third is always, either in the human voice or on all instruments, the sweetest and most pleasing of all intervals; that the minor third here alluded to is produced by the necessity of raising the note 7 a semitone in all minor gamuts, to make it *sensible* or *tonic* dominant; that the law of the distance of a semitone between the sensible and the tonic or its octaves, in all the scales of the two modes, is dictated by the Almighty, and obeyed by all mankind, civilized or savage; whilst, on the contrary, the two natural semitones, from *Si* to *Do* and from *Mi* to *Fa*, in both modes, prove that there is no natural law forbidding the intervals between sound and sound, in any scale, to be either less or greater than a major second, provided they be not less than one semitone, nor greater than one minor third, or three semitones. There is no doubt that the ear admits of that mode of descent in minor scales—*Do*, *Si* flat—*La* flat, *Sol*—*Fa*, *Mi* flat—*Re*, *Do*; but for whom could the reason of this admission remain a mystery? Is it possible that it should have remained hitherto unobserved, that the first step from *Do* to the inferior *Si* flat is a precadencial alteration, producing the key of *Fa*, in this manner:



Typometric or Thorough Bass.

Who does not clearly see that this alteration is the very same which, in the minor mode, transforms the cadence of *Do* (*Do*, *Mi*, *Sol*) into the precadence of *Fa* (*Do* 5, *Mi* 7, *Sol* 2, *Si* flat 4)?

Who does not perceive at once, both with his eyes and through his ears, that the *Si* flat, which has destroyed the tonic dominant, *Si* natural, brings with it another tonic dominant, *Mi* 7, as the infallible fellow to the *Si* natural, 7 of the key of *Do*? Who can remain unaware, or refuse to acknowledge, that, by lowering the *Si* natural to *Si* flat, a modulation instantaneously ensues on the plagal tetrachord, which modulation disturbs the tonic domination? In one word, the fact is that the old school implicitly understood the major mode as arising from the tonic or key-note, in the very act of explaining the minor mode. As soon as, for the purpose of descending the minor gamut, it is perverted by lowering by a semitone the sensible, *Sol* sharp (in the scale of *La*), the sensible, *La* sharp (in the key of *Si*), the sensible, *Si* natural (in the key of *Do*), &c. &c. the ear loses the track of the established key, and likewise of the reigning mode: moreover, the precadencial rhythm of the gamut, which consists of the seventh or sensible, has disappeared. And so, in the plain chant or church music, and in all its counterpoints, the key *Alamire* (as well as any other in which an accident ought to fall on the notes 1, 3, or 5) has no perfect chord, on account of the *Sol* 7 being in want of its sharp; which explains the absence of that sharp being, in practice, supplied by the singer or the performer, because it is not written by the composer. Finally, if it be certain (and it is so) that some difference does exist between the ascending and the descending scale, it must be observed that the difference is not peculiar to the minor mode, nor arises from the nature of the intervals, but is common to both modes, and proceeds from the configuration taken, and from the alteration suffered by the organ of voice; also from the gradual diminution of air-vibrations in the ear as the sound becomes graver. It is therefore a law of nature, rather than a rule of art, to perform *decrescendo* in the descent, and *crescendo* in the ascent, of strokes, long roulades, and certain strains of recitatives. This law or rule is also in conformity with the other natural fact, of resonance not being productive of any graver sound than the generator, and of producing them all in the acute octaves, as more harmonic (viz. the most just in its respective interval) at a greater distance from the generator than the less harmonic one. This is the third at the 17th, and the fifth at the 12th. Here our reader will find, we hope, as we do ourselves, a new additional proof of the harmonic strength of the third being greater than that of the fifth; and of the true dominant (according to the meaning hitherto received—viz. that of *principal note in importance*) being the note 3, but by no means the note 5, as has been hitherto taught by

the universality of theorists. (See the *Prolegomena*, §§ 3, 60, 61; and the Chapters VI and XIII of the present Treatise.) Now, since an opportunity meets us, rather than we meet it, let us avail ourselves of it, and say that the sense given to the word *dominant* by modern theorists is not the same that was attached to it in its origin. The ancients had and acknowledged two *dominants*, the key-note and the 5th; the former for the first tetrachord, beginning with the note 1, and ending with the plagal note 4; and the latter for the second tetrachord, beginning with the note 5, and ending in the tonic-octave, note 1 again. The Rev. Father Mersenne, and the learned Englishman, Dr. Callcott, both declared in their works that "the name of *Dominant* does not refer but to the greater frequence "with which the key-note and the 5th are repeated, and make "themselves heard in a musical discourse: for which reason, they "are ruling the key, and domineering over it."

Hence it is clear that the ancients acknowledged two chords; the one grounded on the tonic, and having for its basis the third 1—3, major or minor; and the other grounded on the note 5, and having for its basis the third 5—7, necessarily major. Hence it is evident that they recognized, before its birth, our doctrine of two chords: the *cadence Do*, with its attendants of two thirds, major and minor, or *vice versâ*, viz. *Do, Mi, Sol*, 1, 3, 5; and the *precadence Sol*, with its attendant of one major and two minor thirds above it, *Sol, Si, Re, Fa*, 5, 7, 2, 4: and that they acknowledged them, though tacitly, with the whole musical world, as the rulers of all music, and dominators of the ear.

To conclude—let us add, that were the title of *dominant* to be given to only one of the seven sounds of the diatonic gamut, as it appears to be wished by modern theorists, that title ought to be indisputably bestowed on the note 7, justly acknowledged by all as the *leading* or *sensible* note, and which is the most frequent of all sounds, as well as the best leader towards the key-note, which we have demonstrated in a foregoing chapter, in which we have endeavoured to complete the system of dominants.

§ 29. We suppose that our intelligent reader has observed, as well as we have, that the note 4 (let us say *Fa*, taking always the key of *Do* for the type of our paradigms) has not in the minor gamuts the same tonic character which it possesses in the scales of the major mode; because, in the minor, it is not preceded by the semitone *Mi* natural—*Fa*, to which it owes its twofold—we fain would say its amphibological—character of cadence of *Fa* and transcadence of *Do*; and this defect of doubleness of tonic dominants,

which the major mode may be twitted with, whilst the minor mode is free from it, undoubtedly constitutes a pre-eminence of pureness in behalf of the latter. Indeed, in the scales of the major mode (in that of *Do*, for instance), there are two tonic dominants; viz. *Si* and *Mi;* and there is no modic dominant, unless it be artificially produced; viz. *Re* sharp or *Mi* flat. In the scales of the minor mode, on the contrary (in that of *La*, for instance), there are two modic dominants; viz. *Si* and *Mi;* whilst there is no tonic dominant, unless it be artificially produced; viz. *Sol* sharp. The advocates of the major mode (and they are numberless) will perhaps object, for the sake of its defence, and by reciprocity, against the duality of modic dominants in the minor mode; but, reciprocity of challenge! their impeaching argument will fall defeated; for this reason—that all the gamuts of the two modes want only one tonic or key-note, whilst they must necessarily have two modic notes, the 3 and the 6. Here we call to our reader's notice this remarkable counterposition between the two modes: viz. that those very two notes, *Si* and *Mi*, which are tonic dominants in the typic major scale, are modic dominants in the typic minor scale: so that the notes 7 and 3, tonic dominants in all the keys of the major mode, become 2 and 5 and modic dominants in the corresponding keys of the minor mode, i. e. of the keys one third lower.

§ 30. If, considering the scale divided into the two tetrachords mentioned as moieties of the first of the two Greek gamuts translated in § 22 of Chapter VII of the present Treatise, pages 400 and 401, we flatten the notes *Mi* and *La*, the result will be, that the two notes which precede and the two notes which follow the two ancient dominants (viz. the *Do*, foundation of the cadence, and the *Sol*, foundation of the precadence) will be the same which form their minor precadence; viz. the harmonic root of the key of *Do;* presenting, in the middle of its four notes, the modic *Mi*, as tie or link between the two typometric groups; the one having for its extreme notes the two characteristic of the precadence, viz. 2 and 7, with the representative of the cadence in its centre; and the other having for its extreme notes the two characteristic of the transcadence, viz. 4 and 6, with the representative of the precadence in its centre, as may be seen:

Harmonic Root.

Precadence.....

Harmonic Root.

Mode .....

Harmonic Root.

Cadence .....

Harmonic Root.

Si — Do — Re = Mi = Fa — Sol — La ♭ — Si 8ve.
⋮ 1 ⋮ 3 ⋮ 5 ⋮
7 2 4 6♭

Let us observe that, according to this secular manner of presenting the scale of *Do* natural minor, the cadence 1—3—5 is encircled within that consonant sonorousness called the harmonic root, *Si, Re, Fa, La* flat. We have repeatedly stated already that it is exclusively precadencial and minor, and bears not in itself that character of uneasiness and impatience proper to the neutral precadence only, and which causes the cadence to be immediately wished for; but, on the contrary, appears to be pleased to dwell in itself, and descends, without the least alteration in its nature, as many semitones as the composer wishes to make it go down.

The harmonic root affords the simple and complete explanation of a mystery hitherto held as inexplicable. We allude to the tritone, which, by certain theorists, was considered as consonant, and by others as a dissonant chord, under the names of *extreme sharp fourth, Fa—Si;* and of *diminished fifth, Si—Fa.* The truth of the case is, that the tritone, neither in its direct nor in its inverted state, can be dissonant; because in none of its positions does it present the interval of a second; and in none of them is it a natural fourth, because it does not comprise five semitones; nor is it a natural fifth, because it does not contain seven semitones. It is composed of six semitones, or two minor thirds, which render it doubly consonant. We see, moreover, that all the other intervals are multiplied in one single scale, in the following manner, and that the tritone alone is not to be found in it more than once:

Minor-seconds... ...	two ...	...7
Major-seconds... ...	five ...	
Minor-thirds.....	four..	...7
Major-thirds.....	three .	
Minor-fourth.....	0	...6
Major-fourths... ...	six....	
Minor-fifths..... ...	one ..	...7
Major-fifths...	six... .	
Minor-sixths.....	three .	...7
Major-sixths..... ..	four. .	
Minor-sevenths.....	five ...	...7
Major-sevenths.....	two ...	

The unity or singleness of the tritone in the major gamut being demonstrated, we are led to observe, that, in order to find another tritone, we must first find another scale; and (what is more, though it be apparently the same), in order to find another scale, the first thing that is to be done is to find another tritone. For instance, do we seek for the tritone upon the *Do ?* we find *Do* 4, *Fa* sharp 7, then key of *Sol.* Do we seek for the key of *Re?* we find the tritone of *Sol* natural—viz. *Sol* natural 4, *Do* sharp 7: whence the supreme and decisive importance of that interval, which in itself contains the three dominants, is rendered obvious and undeniable. The following evidence may be applied to all the tritones of music:

Dominants.

Of Rhythm.....Fa ♮ 4
Of the Mode..... Re ♮ 2 } Tritone.
Of the Key.....Si ♮ 7

As the tritone forms so preponderant a part of the harmonic root (*La* flat, *Si*, *Re*, *Fa*), the greater bulk of consonance which it contains goes integrally into the neutral precadence, *Sol*, *Si*, *Re*, *Fa*, and also into the false precadenee, *Si*, *Re*, *Fa*, *La*, which, consequently, always rules the key, the mode, and the rhythm, notwithstanding the dissonant intrusion of either the *Sol* or the *La.* If the musical influence of one tritone be so powerful, how much more so will be that of two tritones tied to each other! What will be the ascendency of three or four tritones, considered under the twofold aspect of a diminished fifth, or of an extreme sharp fourth!!

Harmonic Root.

Tritone, or extreme sharp fourth.....	Re ♮	2	
	Si ♮	7	Tritone, or extreme sharp fourth.
Tritone, or diminished fifth.....	La ♭	6	
	Fa ♮	4	
	Re ♮	2	Tritone, or diminished fifth.
	Si ♮	7	

Key of Do ♮.

And the same numbers with the different notes brought to their side by every distinct key.

What is the effect produced on the ear by the first destruction

of this chord, which is executed by lowering the *La* flat a semitone, to *Sol* natural? That effect is to disquiet the ear, to cause it to fret, and to make it wish for one of two things, either to pass to the cadence of *Do*, which is the one belonging to the yearning chord, or to return to the primitive one, by raising the intruding *Sol* natural to the missing *La* flat. This motion is so very pleasing to the ear, that our readers have undoubtedly often employed it, and even disapproved of the excessive frequence with which it is used in modern music; thus endeavouring to make up by a profusion of harmony for the deficiency of invention of new melodies. This is identically the happy resource of certain poets, who, being in want of thoughts, ideas, or rhyme, hollow, dilute, or emaciate their poetical lines, to get out of their needy difficulty.

To conclude, let us observe that the most natural, the most thrilling march of this chord, is to integrally descend in a parallel manner, by successive semitones, which produce a delightful fusion of chromatism and enharmonism with the tonic, the modic, and the rhythmic character, which characters are exclusively diatonic, as remains unexceptionably demonstrated. (See Chap. XXX, § 102, page 271, of the first Treatise; Chap. I of the second, page 349; and the word *Progression*, in the Analytical Index.)

§ 31. From what has been stated in § 24 of Chap. VIII, p. 402 and foll. and explained in the preceding §§, it is easily inferred that, of all utterable intervals, the shortest is the most natural to the human voice, and that for it the semitone is the first degree of utterable dissonance that can be emitted in regular progression, by equal intervals. This fact was probably the cause of the invention of the temperament, one of the most positive and fruitful improvements ever made in music—an invention which, in destroying the two pretended genera, the chromatic and the enharmonic, as groundless, false, and useless, entirely changed and renovated the musical system of Europe, and of science itself. That invention was due, in or about the middle of the fifteenth century, to *Bartolomeo Ramos*, a learned professor, of the University of Salamanca. As soon, indeed, as he pronounced the words *duality of each degree*, and *semitoned diatonic scale*, all in music became acoustic truth for the ear, truth for the understanding, truth for the eyes, and truth even for the fingers, which found all octaves and sounds symmetrically disposed on the key-board, as travellers find on the high road milestones, gradually telling them the steps that remain behind, and those which are still before them.

All the sounds produced by nature, from a peal of thunder to

the sweet note of the nightingale, the fall of the hammer on the anvil, the resonance of a tight string, the knock struck on a tumbler, all and every one of them, may be taken as the foundation or key-note of a gamut. Let us adopt one: and then, our tonic being known, let us take it for our starting point, in order to reckon our musical intervals from it. We shall begin by the semitone inferior to the tonic *Do*, which will be, for instance, the *Si*, 7. Nature has given to that *subtonic* semitone so energetic a propensity, so irresistible an impulse towards the tonic, that nothing can resist this violent attraction, which is not, however, reciprocal from the tonic towards its inferior semitone. Let us strike at the same time the two notes *Si* and *Do;* and, what is more, let us accompany that dissonance, not with the consonance or cadence, which would strengthen the tonic potency of *Do*, but with the other three sounds, harmonizing with the note *Si* (*Re, Fa, Sol*), which, it appears, ought to weaken the preponderance of *Do:* the result will be, that the ear is not one single instant deceived, nor even puzzled or hesitating: it does not, for the shortest divisible space of time, lose the track of the tonic potency, taking for tonic, among those five sounds, any other sound than the *Do;* what it does, is to fret more and more impatiently, requiring the destruction of the pretonic sonorousness, or the resolution of the *Si*, of the *Re*, and of the *Fa*, in order to hear, freely and purely, the tonic *Do* alone, or its cadence. This fact, so simple in itself, and so incontestible according to the unobjectionable testimony of the ear, is all that the theories hitherto most in repute have endeavoured, without success, to explain with a clear and convincing ratiocination. It remains, therefore, plainly demonstrated that this chord of major second, fourth, fifth, and major seventh on the key-note, 1, 2, 4, 5, 7, is homotonic or precadencial on the tonic of its own gamut.

This fact and its explanation are fully corroborative of the principle which we have repeatedly laid down; viz. "That any dissonance energetically inclines to incorporate and melt itself in "unison with the tonic, if it be immediate, or with one of its consonant sounds, if it be remote." Whence arose the general rule, that "Every dissonance must be resolved on the nearest consonant "sound, whether above or below."

§ 32. The Chapters III and IV of the Practical Treatise, and I, II, IV, and VI of the present Treatise, have hitherto, as well as the 3 preceding §§, sufficiently borne witness of our efforts to ascertain the origin and to determine the nature of the key and the mode. We now arrive at the moment of explaining them. Though we

have often said, in this volume, that the two primitive gamuts of *Do* natural major and *La* natural minor, types of all the others, are facts existing of themselves in nature, and have no other origin than the will of its Almighty Maker, this was no reason why we should not have sought for and traced the process followed by that very nature for the fixation of both the key and the mode. We have found that the twofold fixation alluded to is dependent on and ruled by the minor third.

Indeed, as long as the utterable sonorousness has not gone away, or retroceded to the distance of three semitones from a first sound or monosound, there is no key; and as soon as there is a key, there is a mode: and the first mode which is reached or met with is the minor one. If the divergency or retrocession be downwards, the monosound (*Do* natural, for instance) declares itself instantaneously note 3, modic, and the tonic is *La* natural 1. If the retrocession or divergency be upwards, in the very moment of the emission of the *Mi* flat, which is also the note 3, and modic note of the starting monosound *Do* natural, this *Do* natural declares itself tonic, and its own scale begins with it. That difference of the two primitive gamuts or keys which arises from the divergency, either superior or inferior, of sonorousness from a central and common point of departure, is, we must acknowledge, the same that was found out by former theorists, by means widely different, antecedent causes, and reasonings; since they also exhibit, as typical scales and primitive keys, those of *Do* natural for the major and *La* natural for the minor mode. Another proof, and a conclusive one, of this being the true origin of the fixation of the key and the mode, is the ensuing observation:

We know that a law innate in man is the propensity to accompany any melody by singing the same air or tune at the interval of one third either above or below—a propensity which is always pleasing in its effects. Suppose that Peter says to Paul: "Sing a duet with me:" he will answer, if he be a musician: "Give the key:" and Peter's reply will be: "I cannot, for it is precisely that which we are going to look for." After this dialogue, whether Paul be a musician or not, the next step will be as follows. Peter gives a key of any kind (which we will call *Do* natural, for example); Peter's accompanistwill give, of himself and without any motive of preference, one of the two thirds of the *Do* natural which Peter has pronounced, either the inferior or the superior. If Paul sings the inferior third, he has given the *key*, and Peter has given the *mode*, and they continue to sing in *La*. If, on the contrary, Paul

takes the upper third, he has given the *mode;* Peter has given the *key*, and they sing in *Do.* This simple fact proves that as soon as the sonorousness of the third exists, the *key*, the *mode*, and the *scale* (which are the *rhythm*), and consequently all that constitutes music, exist in like manner. The first euphonic sonorousness of nature is then the smallest; i. e. the minor third. Therefore the minor third is the correction of the intermediate disorder of the enharmonic, chromatic, and diatonic seconds—all dissonants with the monosound or primitive sonorousness: it is consequently the origin of the key, the mode, and the rhythm. Amongst the numberless classical pieces, in the examination of which we should find the palpable confirmation of this truth, we would propose to the reader the example number 6, in the last chapter of this work, entitled *Great Models.* That example presents the first twenty-six bars of a *double fugue*, in four parts, by the immortal Haydn. The key of this sublime composition is *Fa* natural minor. It begins (according to an arbitrary but already admitted rule in the practice of the art) with the dominant or fifth of the key (*Do* natural), i. e. in our theory, with the *precadence*, instead of beginning with the *cadence.* This first fact already demonstrates two things to us: in the first place, that the piece begins in reality with the key of *Do* natural major, and not with that of *Fa* natural minor, which is the key signed at the clef and reigning through the piece; in the next place, that the enunciation of the key of *Do* has for its object to make the hearer enter into the key and the cadence through their true door and across their natural and original vestibule, which is their precadence. This single example is the confirmation, not only of the matter of the present chapter, but also of our whole work. In continuing our examination, we shall also find that the *Fa* natural, in pronouncing its cadence of the minor mode in the ~~arsis~~ thesis of the second bar, simultaneously exhibits there the key, the mode, and the rhythm; and that these three characters are declared and confirmed in the ~~thesis~~ arsis of the same bar, where the author has placed the minor 6 (*Re* flat), which, by causing the emission of the harmonic root of the key, leaves in the ear nothing of which it can doubt, and nothing to desire, which is the principal object. We afterwards see the melody always written, as far as the twenty-third bar inclusively, in the key of *Fa* natural minor, and filled up with its pure cadence, which solely and exclusively alternates with its pure precadence and its harmonic root. In these twenty-three bars, the pure cadence presents itself twenty-two times, the precadence nine, and the harmonic root seven times. The other chords are the cadence, the

precadence, and the harmonic root, of the scale of *Do*, precadencial of the reigning key of *Fa* natural. We see that the author, directing from that moment his musical aim to the act of modulating towards a new key, begins the twenty-fourth bar with altering the minor mode of the reigning key, *Fa* natural, which he does by suddenly converting its cadence into the precadence of *Si* flat. He then gives, in the act itself, to this *Si* flat its major mode, *Re* natural, which it had not previously (the *Re* being flat), and which in the same moment converts it into the precadence of *Mi* flat. He leaves to this *Mi* flat (twenty-sixth bar) its major third, *Sol* natural, which instantly changes it into the precadence of *La b*. Thus, all the time that the author wished to modulate out of the reigning key, he employed the major third as a means of destruction and reproduction, in entire conformity with the Geneuphonic theory. In the whole course of the piece, which is the *finale* of one of Haydn's best-known quartets (and consequently to be had at all the principal musicsellers'), the reader will find numberless proofs of the accuracy of our foregoing assertion; which proofs are so much the more irrefragable, that they are drawn from the most learned, the most delightful, apparently the most complicated, though in reality the most simple, work that ever issued from the pen of the contrapuntist. This admirable and masterly composition of Haydn comprises all that is necessary to be known in counterpoint, in harmony, and in composition; and we are proud and happy to add, that is the application of the whole theory developed in this volume. Two experiments, most satisfactory in their results, have lately taken place; the one at the Royal Conservatory at Madrid, the other in London, at the house of him who is now writing the present lines. Some pupils of the establishment alluded to, in the capital of Spain, two musical students and a young lady in the British metropolis, have analysed, cyphered, and explained this piece without a single error, to the extreme surprise of several professors present in both cases; whose astonishment was not so much at witnessing the success of the pupils, as at seeing them discover and completely unravel the extremely simple artifice and mechanism of a composition previously looked upon as one of the most complicated and arduous, as one of the most repulsive in its study, and the most difficult to be explained, of all the works the most in repute thoughout the whole musical world.

CHAPTER XII.

TYPOMETRIC RETROGRADATION.—ANALOGY OF SCALES.—TEMPERAMENT.

§ 33. The three groups or chords of the typometer which so pleasingly follow each other in the direct or natural succession, have not the same property when articulated in the retrograde order, though the same ties between them subsist in both ways. The object of the present chapter is to explain the cause of this difference.

In the direct order, each group is the precadence, more or less complete, of the following chord. In the retrograde order it is not so. Several of the Rules laid down in Chapters VIII and IX of the Practical Treatise, and the § 11 of Chapter V of the present one, have shown the reciprocity of the connection between the cadence and the transcadence. We shall only add, that they may be used alternately before and behind each other; because the transcadence contains the two principal notes of the false precadence, viz. 4 and 6, placed between the tonic below and the tonic octave above; so that when the transcadence is placed before the cadence, the 4 falls on the 3, as the 6 falls on the 5, instead of the 3 and the 5 ascending to the 4 and the 6, as is the case when the cadence is heard before the transcadence. If these two chords, therefore, were heard several times in alternated succession, their intermedial notes would produce a shake between a double pedal, upper and lower, formed by the key-note and its octave.

The precadencial structure, from the cadence of *Fa* to that of *Sol*, is less complete than it is from the cadence of *Do* to that of *Fa*; which is demonstrated in this example:

1.....Do♮.....4		Add...Re♮..5		5
6.....La♮.....2		4		4
4.....Fa♮.....7*		2		2
Transcadence of Do.	Imperfect precadence of Sol.	7* Precadence of Sol, less imperfect.	Fa♯	7♯ Perfect Precadence.

We see that three notes of the cadence of *Fa* (transcadence of *Do*) are precadencial sounds of the cadence of *Sol* (precadence of *Do*); one of these three notes, the *Fa*, is imperfect, because it ought to be sharp, in order to be precadencial of the key of *Sol*. Then this chord, to be perfect precadence, should have two things: the one four notes instead of three; the other a sharp at the *Fa*. Let us add the fourth note, *Re* 5, and the sharp at the *Fa*, and we have the complete precadence of *Sol*. Notwithstanding its defects as precadence of *Sol*, the cadence of *Fa* very pleasantly precedes the cadence of *Sol*. The strongest cause of that agreeableness is that the *Fa*, by means of its conjunction with the *Sol*, tonic of *Sol* and fifth of *Do*, is going to generate the key of *Do*.

Let us now examine the effects of the retrogradation from the precadence to the transcadence of *Do*. Let us see all the operations wanted by the former to become precadence of the latter; viz. of the cadence of *Fa*.

7.....Si ♮	Si ♭.....movement and alteration ♭.
5.....Sol ♮	Sol ♮ 2, ..tie or link.
4.....Fa ♮	Mi ♮ 7....movement.
2.....Re ♮	Do ♮ 5....movement.
Precadence of Do ♮.	Precadence of Fa.

In order to bring the precadence of *Do* to be the precadence of *Fa*, it has been necessary to alter one note, and change two more; and the only note prolonged, or used as a tie or link, has been the *Sol*, which, being note 2, is, as such, the least energetic of the precadencial sonorousness. The consequence of such a wide difference between two precadences, as that of *Do* and that of *Fa*, is, that the retrograde step from the precadence to the transcadence of *Do* is contrary to the approval of the ear, and, on this very account, to the Geneuphonic theory. The law of music, or the law of the ear, which is the law of nature, is to arrive with the shortest delay at the cadence of a key through its precadence, as soon as this latter chord, either complete or incomplete, has announced that key; which we have just seen in the passage from *Sol* to *Do*, from *Do* to *Fa*, and from *Fa* to *Sol*. This rule of nature has been experienced by and proved to our readers when they heard the examples of pages 88 and 210 duly performed, in which the precadencial marches, or succession of avoided cadences, cause the ear to be more impatient and uneasy at every disappointment it receives, as

often as the cadence which it expects is delayed by an insufficient substitution. The organ of hearing is always under the urgent necessity of enjoying the pure cadence, the only chord which gives at once the three consecutive elements of music, viz. key, mode, and rhythm. And so, when the composer wants to extend to four times the typometer, which in its essence is trinary, he is obliged to duplicate the cadence at the third time: and then art, or rather practice, in order to colour its attempt contrary to nature, and to endeavour to cause that third chord to be taken by the hearer's eyes as distinct from the cadence, presents it inverted, and gives for thorough bass the note 5, instead of note 1; and this is termed *second inversion*, or *chord of the fourth and sixth*. But, incorruptible as it is, the ear is not so easily deceived as the understanding of theorists; and the ear, in this case, dictates to the singer or to the instrumental performer the note 1 instead of note 5. Let it be as it may, every musical composition, every musical phrase even, is quickly judged by the euphonic law of nature, according to the pleasure it affords, or the displeasure it inflicts: if pleasure, observance of the law; if displeasure, its violation.

§ 34. The obstacles thrown in the composer's way, and explained in the preceding §, in case he should effect a retrograde march from the precadence towards the transcadence, gives us an opportunity of stating, that if the table of heptachords (see page 97) be written in only one line, containing as many heptachords as it does contain (each of them forming one scale and belonging to two more)—as long as permitted by the power of the most extensive human voice, or of the largest church-organ, the greater analogy of keys between themselves will not be ruled by the greater proximity of tonics to each other, but will depend on the smaller number of alterations made by one key in the gamut of another. Thus, for instance, the keys of *Do* sharp and *Do* flat are the least analogous to the key of *Do* natural; because they alter all its notes, the former with sharps, the latter with flats. The old science of counterpoint condemns those transitions; the ear, however, and Geneuphony approve of them.

Another instance in which the old science and the ear do not agree, is the following: When the old science constructed a musical system, grounded on mathematical calculation, and consequently on numeric truth, old science raised indeed a well-proportioned edifice for the pleasure of both the mind and the eyes, but, in truth, completely detestable with regard to the ear. The fact is, that, in proceeding by exactly equal intervals, every octave suffers the alteration of $\frac{1}{8}$I; and, consequently, adieu to unison; farewell

to octavism; good bye to perfection in tuning. Let us therefore exclusively obey the decisions of the ear, the only *jus et norma canendi*, and do away with those monstrous partitions, only fit for the eyes, and in which scientific Turgidness and musical Pathos seem to us to have consecrated their laborious and classical talents solely to the deaf. Fortunately for the progressive improvement of the science of harmony, the invention of the *Temperament* sprang up from the University of Salamanca. It assumed that name because it was mathematical exactness tempered or allayed by musical accuracy. The result of the union of duality, in the five musical degrees, with the unity or singleness of the two semitones, was, that it became easily proved that with arithmetical rules, or integral and differential calculus, good music could never be produced; and that the real musical truth lies in the harmonic identity of the various octaves between themselves, and in the distribution of every scale into twelve semitones; if not perfectly and absolutely equal to each other in one same gamut, at least perfectly and absolutely equal, each of them, to the corresponding semitone in any other scale. This was a truth beyond which no other musical truth can ever go. That truth, and the simple laws the promulgation and explanation of which we are about concluding in this volume, will infallibly give birth to exquisite compositions—will produce easily and quickly the acquirement of solid and thorough musical knowledge—and will, moreover, lead to a correct appreciation even of those lost sounds indicated by their want of number in our Table of Polotonogamism.

CHAPTER XIII.

ACCORDANCE OF THE SONOROUS WITH THE RHYTHMICAL POTENCY. —INITIATIVE MOVEMENT.—SHAKE AND CADENZA.—PEDAL.

§ 35. In the trinary measure, the first two times are accented or strong; they form the thesis: the third time is unaccented or weak, and forms the arsis of the measure. This is explained by the typometer. The first time is filled up by the cadence, and is strong,

because its two thirds (in the key of *Do*, for instance), the lower one, *Do—Mi*, the upper one, *Mi—Sol*, are grounded upon the tonic, which is the basis and the end of the tonogamic potency, and because they admit of no dissonance at all. The transcadence takes up the second time, which is strong also; but is less so than the first time, because only one of the two thirds of the transcadence belongs to the pure heptachord—viz. not yet octaved,—whilst its second third, *La—Do*, takes its higher note in the following heptachord; on which account that third, *La—Do*, might be said to appertain to the scale of *Fa*, rather than to that of *Do*. As the transcadence, however, contains no dissonance, the second time, which holds it up, is accented, though not so strongly.

The precadence occupies the third time, which is weak, because the third, *Si—Re*, is inverted, and presented in it as sixth, *Re—Si*, instead of being articulated direct, and because it contains a dissonance. This simple explanation proves that the common time or binary measure is artificial, instead of being primitive; since, in typometric truth, it presents three strong times and only one weak one, in this manner:

	1st time.	2nd time.	3rd time.	4th time.
	Cad.	Transc.	Cad.	Preca.
	Strong or accented.	Strong or accented.	Strong or accented.	Weak.
Usual bass.....	1	4	5	5
Typometric or thorough bass	1	4	1	5

In a §, the topic of which is the union or alliance of rhythm (viz. musical life) with the sonorous body (viz. with musical matter), we should be wrong were we to omit presenting to the appreciation of our readers an observation which occurred to our mind in the act of writing the note attached to the § 22 of this Treatise; a note which refers to the Greek scale found eight years ago among some old manuscripts, written in Greek, Latin, and all the languages of ancient Asia and Africa, which were, a little more than three centuries ago, in the possession of that very Erasmus to whom the Christian world was indebted for the first copy of the New Testament of our Lord that was printed in its original tongue. Any one who will have perused our present Grammar, will be struck with astonishment when he measures the depth of instruction, the sources

of which may be found in the study of that Greek gamut, of which we shall succinctly sketch here only the principal features. Before our reader proceeds further, we beg he would re-peruse the §§ 22 and 30 of the present Treatise. This being done, we need not add one single word about the *Proslambanomenos*, *Si*, note 7. Now mark, that, according to the duration given in that Greek gamut to each note of the heptachord, its respective importance may be judged.

The *Proslambanomenos*, placed alone at the end of a preliminary bar, does not enter as a part of the whole gamic duration; because that opening bar is melted in the fourth and last. In the *first* measure, the *Do* 1 holds up the three fourths of its length; the *Re* 2 occupies only the remaining fourth part. This fact suffices to show the proportion which the Greeks would consent to assign to the precadence in the regular march of a melody.

The *second* bar is equally divided between the *Mi* and the *Fa*: a circumstance which we explain thus:—" An equal attention is to " be paid to the mode and to the rhythm; but a greater still to the " key."

From the *third* measure we infer that the note 5 is of much more importance than the note 2; 1stly. because it reigns over the second tetrachord, of which it is the basis; 2ndly. because it is the representation and the typometric bass of the precadencé; 3rdly. because it belongs to both the cadence and the precadence, between which it is the only link; 4thly. because it is one of the two generators of the key in which it is note 5. We see that to all these advantages the note 2 has no other to oppose than that of being the dominant of the minor mode. We observe also, that, notwithstanding all those titles of pre-eminence, no more is to be granted to it than to the *Mi*; because the *Mi* is the tonic's partner in the formation of the fundamental third; because the *Mi* 3 is the ruler of the mode. We further observe that no more importance is to be granted to the *Sol* than to the *Fa*; because the *Fa* is, with the *Sol*, the other sound-generator of the gamut in which it is note 4; and because the *Fa* is the indicator, the representation of rhythm; because it is, as well as the *Sol*, the foundation of one of the three typometric groups of the key.

This third measure affords us another twofold information; viz. that the *La* flat is not deserving of more than one half the regard paid to the *Mi* 3; because, though as modic as the *Mi*, it is not so much so in the scale in which it is note 6, as in that in which it is note 3; and that the *Si*, though the leading and sensible note,

though the tonic dominant, must not be heard longer than the *Re* 2, because it is the extreme note of a third which, in its quality of neutral-precadencial, never becomes minor third, as the *Mi* often does.

In the *fourth* measure, finally, the duration of the *Do*, equal to its duration in the first bar, its repetition, its essence of being the *alpha* and the *omega* of the reigning scale, prove its paramount, its supreme importance.

We could protract this analysis, and draw from it many more corollaries; but we have said enough for the sagacious reader, who will himself surely draw other inferences from the study of this gamut. Let us therefore, in concluding, acknowledge that, though twenty-one or twenty-two ages old, it comes most *à propos* to furnish us, in 1849, with a perfect model of the conformity and proportion to be observed between rhythm and sonorousness.

§ 36. Every chant, song, or melody, necessarily begins with the precadence or the cadence, but never with the transcadence. If it begins with the precadence, it must inevitably commence by the weak or unaccented time, the last of the bar. In this case, the phrase is at once declared from that first sonorousness; and the ear wants and expects the immediate arrival of the cadence, which expresses the rhythm; it wants their twofold presence in the very next accented time. Let the melody be in the key of *Do*, and utter at the arsis the notes *Sol*, *Fa*; it is clear that, at the following time, which will be the thesis, it has to utter the note *Mi*, which *Mi* declares or fixes the rhythm, and takes the cadence for its accompaniment; thus affording the ear the greatest musical delight, by fulfilling both its foreboding and its expectation—two distinct feelings indeed, and seldom realized at the same time.

On the contrary, if the melody begins with the thesis or accented time, it articulates no phrase, and only appears as a preliminary sonorousness, emitted for the sole purpose of giving the key. It is evident, in this case, that there is no indication of phrase till the next chord, which must necessarily be the precadence. In other words, the initiative by the precadence is proper for melody: the initiative by the cadence appertains to harmony. In like manner, melody precedes harmony, as the precadence precedes the cadence, as unity precedes plurality, or singleness precedes multipleness.

§ 37. In Chapter III, §§ 21 and 22, pages 16 and 17, of the Elements of Music, which we have prefixed to this Grammar, and written with the usual names, as well as conformably to the reign-

ing doctrines, we have spoken and given examples of both the *Cadenza* and the *Shake*. The name of *Cadenza*, given to this musical embellishment, proceeds from its propensity to fall on the key-note, or from its falling march towards its perfect chord; because, as the tonic is the lowest sound of the gamut, the hand of him or her who marks the measure drops or falls when the final tonic is uttered. Sometimes, however, although but seldom, the last note of the cadence is lower than the final tonic. The cadenza and the shake have often been taken for each other. Their difference, exactly determined in the above-mentioned chapter, will hereafter be still more precisely pointed out. So many contradictory opinions about the cadenza and the shake are afloat in numerous works, not excepting those of learned theorists, that we do not wish even the explanation of such trifles to be wanted in this volume.

The cadenza is a rapid succession of cadences and precadences, of one or several keys through which the cadenza passes, either by modulation or by transition. The cadenza, therefore, is free to articulate some notes only, or all, of any key made use of by its whimsical flight. Consequently, one only, or two, or three chords of each key employed in the cadenza, may be made to be heard; and if the cadenza be accompanied by other voices or parts, it is subject to all the rules of a correct harmonization.

The shake is a rapid succession of both the precadence and the cadence of the established key.

Melody.....	Re.	Mi.		Shake.		End.
	2,	3,	2,	3,	2,	1
Fundamental or Thorough Bass,	5,	1,	5,	1,	5,	1
	Sol.	Do.				
Chords.....	P.	C.	P.	C.	P.	C.

This shake is really falling (cadent), because it terminates by falling from 2 to 1. The next is ascending:

Melody.....	Si.	Do.			Shake.			End.
	7,	1,	7,	1,	7,	1,	7,	1
Bass idem, Chords id.	P.	C.	P.	C.	P.	C.	P.	C.

because it ascends from 7 to 1. However, the shake is not usually

accompanied with that alternation of ups and downs in the bass, but only with the note 5 as precadencial bass. The reason is this:

If our reader looks in the analytical index for all the § § of this work in which the nature, the theory, and the use of passing notes have been explained, and refreshes his memory of what he has already perused, he will see that, although passing notes proceed in their march through the same alternity of cadences and precadences as is found in the shake and the cadenza, they are pleasingly heard jointly with only one of those two chords. The same result takes place with the shake and the cadenzà, with the following difference: with passing notes, the dissonance relates to the cadence; with the shake, it relates to the precadence; with the cadenza, it relates to both: for this reason, the chord that accompanies the shake is the precadence, with which the even notes *Do* and *Mi* are dissonant. This is so obvious, that it requires no farther proof. There is, nevertheless, another. As soon as the shake is carried on in such a way as to let the typometric bass, 5—1, disappear, the effect becomes intolerable. Let us, for instance, shake with four parts or voices:

	Shake.				
Melody....	Re....	Mi.	} Resulting cacophony.		
Melody....	Si....	Do.			
Melody....	Sol....	La.	}		
Melody....	Fa....	Sol.			
	:	:	Mi.	Mi.	Mi.
	:	:	Do.	La.	Do.
	:	*	Sol.	Sol.	La.
	:	*	:	:	:
	:	:	:	:	:
Chords....	P.	*	C.	P.	C.
Keys.....	Do.	*	Do.	Re.	La.

Here is no Typometric Bass.

The above example clearly demonstrates that the second half of the shake articulates two cadences and one precadence, which of course makes it insufferable, by destroying the unity of chord, the unity of key, and all idea of a typometric bass.

In the foregoing observations on the nature of both the shake and the cadenza, may be found a fresh confirmation of the principle of only two chords being indispensable to the formation of melody.

§ 38. The operation called *Pedal*, which by its nature is exclusively tonic and rhythmic, but not modic, has probably been, among all nations, the first process of the art of counterpoint or multiple

chant; because it is the first that is indicated by nature. We find, in most of the ancient rustic instruments, the pedal in the shape of a drum, united to the hurdy-gurdy, to the reed, to the flute, and to the bagpipe, which are the rhythm; whilst the drum, whatever be its note or sound, always remains the pedal. This was the first step of natural music towards the art. Such a pedal should not be mistaken for that well-calculated prolongation of notes 1 or 5; for, in truth, it was nothing but the harsh and trembling noise of vague sounds, cacophonically accompanying the uncouth and disproportioned intervals that formed the chant of uncultivated peasants. It was the sound of the *zambomba*, the roaring of a wild beast, or the deepest sound of a church-organ. Whence it results that the accompaniment of a pedal, even after it has received the elaboration of the art, still remains the most free, the most fertile in dissonances, without any special preparations or proper resolutions. The rapid succession of various relations with the principal melody offered to the pedal, keeps the ear in an incessant and varied perception of a more or less euphonic association of sounds. If that alternateness of different perception does not completely delight the ear, on account of the impatience it causes, it does at least fully absorb its attention. In the use of the pedal, according to the rules of the art (see Pedal, in the Analytical Index), that impatience should not be permitted to last long; because the pedal, artistically employed, is tonogamic—a property of which the pedals above alluded to are destitute, and a property, therefore, which makes it subservient to the law of cadence and precadence. Art, accordingly, has no other pedal than the tonic or the fifth; and the latter, for the reason of its being the typometric bass of the precadence, is productive of a great many more dissonances than the former.

The consequence of the preceding observations, all founded on facts, is, that the adoption by the art of only two pedals, which are no other than the two ancient dominants (notes 1 and 5), sets forth a farther confirmation of the undeniable truth of the doctrine which acknowledges, in music, only two radical and constitutive sonorities.

CHAPTER XIV.

SPECIAL CONFIRMATORY COMPARISONS.

§ 39. We may say that with the last chapter ended the Geneuphonic Grammar; for we are going to dedicate the present one exclusively to the comparison with the Geneuphonic principle, of rules, theories, and nomenclatures presented to musical students, and to the philharmonic world, by the didactic writers of the highest repute in the present day.

Mr. Catel, whose work is the first mentioned in our Introduction to this volume, and is still in use for the teaching of harmony in the principal conservatories of Europe, gives, in its first chapter, the general theory (or first idea) of chords, and says: "In harmony there exists only one chord, which contains all the others." That chord is the following:

	Sounds of the only chord of harmony, according to M. Catel.	Nos. corresponding to those sounds according to the Geneuphony.	
Resonance and key of *Sol*,	La ♮	6	Key of *Do*
	Fa ♮* foreign to the key of *Sol*.	4	
	Re ♮	2	
	Si ♮	7	
	Sol ♮	5	

It is as clear as the sun at noon-day that this supposed sole chord in harmony is a four-times dissonant sonorousness; since it contains three seconds, or what is the same, a seventh, *Sol—Fa**; a ninth, *Sol—La*; and a diminished fifth, *Si—Fa*.

It is not less evident that the same chord (even according to the theory of the author, who is unconscious of it) is polygamic, viz. belonging to various gamuts; since, grounded on the triad or perfect chord of *Sol* (*Sol, Si, Re*), it presents the *Fa* natural, which is foreign to the key of *Sol*, but not to that of *Do*, to which it immediately belongs, as well as it does to eight more keys, with less affinity; viz. with more alterations in the sounds of the key of *Sol*. It is not less obvious that, on account of its character of chord of the dominant seventh or neutral precadence, *Sol* 5, *Si* 7, *Re* 2, *Fa* 4, it is pretonic, or precadencial of the key and cadence of *Do*.

It is moreover incontestable that the chord under analysis contains the two qualities of dissonant and cacophonic: of dissonant, on account of its precadencial seventh, *Sol* 5—*Fa* 4; of cacophonic, on account of its triple second.

Fa 4, Sol 5, La 6, Si 7.
2nd. 2nd. 2nd.

Hence it results that, in the ancient theories, the harmonic system begins by the non-consonance, as it does in Geneuphony; since the general element of those theories is the chord in question, acknowledged by them as comprising them all. Though it is obviously false that this chord comprises them all, it is not so that this chord is the acervation or conjunction of all the precadencial notes of the key to which it belongs; and that, in order to be universal (in its own gamut, of course, and by assimilation in all the others), it requires, among other wants, nothing less than the tonic perfect chord, viz. the notes *Do* and *Mi*.

The author afterwards presents the same chord for the minor mode, as follows:

Catel.	Geneuphony.
La♭	6♭ minor.
Fa♮	4
Re♮	2
Si♮	7
Sol♮	5

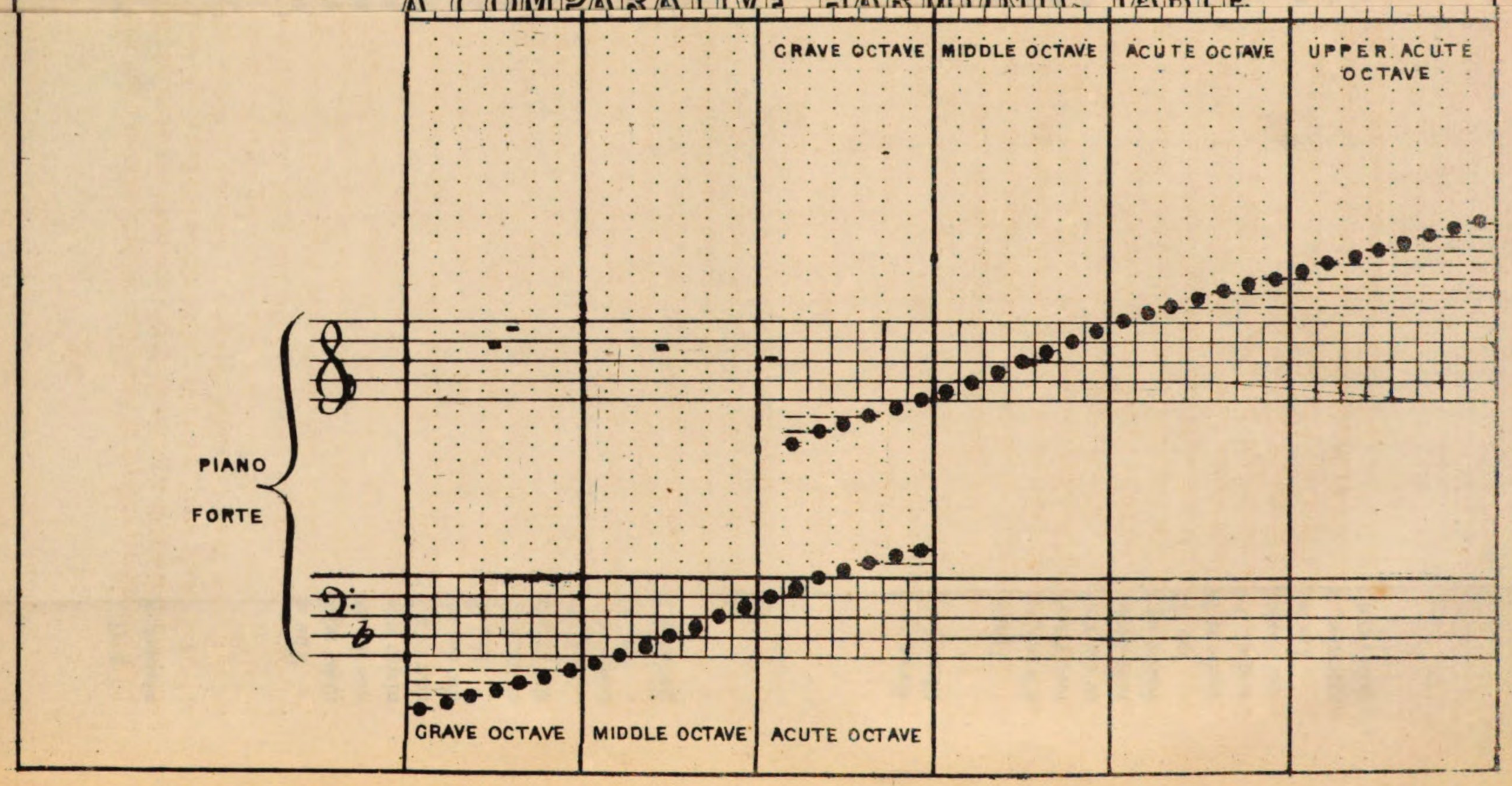
This chord is evidently the harmonic root of Geneuphony, but increased with a sound both cacophonic and incompatible, or, what is the same, the minor precadence simultaneously with the neutral one. That simultaneousness is cacophonic, as are all those which articulate a minor second (as this: *Sol* natural—*La* flat), the two sounds of which mutually rebuff each other: and so this cacophony itself results from the same chord; which we saw in the destructions of the harmonic root, pages 261 and following. This is effected by lowering the *La* flat, 6 flat minor, to *Sol* natural, 5; whence results the neutral precadence, 5, 7, 2, 4; or by taking away the *Sol* natural, which produces the minor precadence, or harmonic root, 7, 2, 4, 6. Consequently, the important observation to be made about that pretended general chord, is, that it exclusively belongs to the key of *Do*; since all its notes are notes of

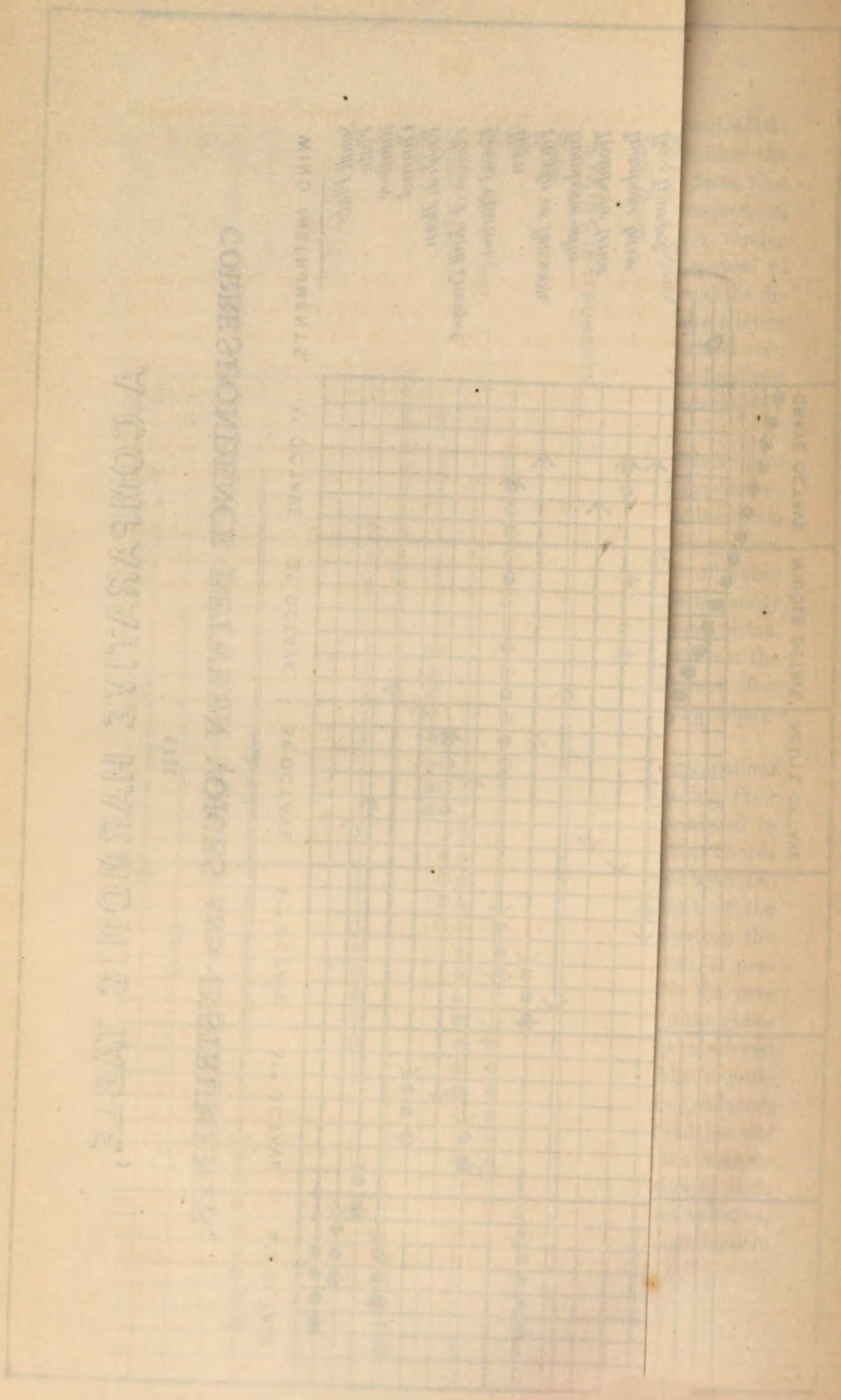
that key; and also that the said chord is pretonic, or precadencial; but by no means tonic or cadencial; since it presents neither the tonic *Do* 1, nor the modic *Mi* 3. We infer, from these facts, that the chord in question is pregnant with the same consequences, whether it bears a *La* flat or a *La* natural. They, moreover, render it manifest that Mr. Catel, though having adopted the system of resonance as the basis of both his teaching of harmony and his didactic writings, has nevertheless begun his exposition of the science of harmony with stating that dissonance generates consonance; thus implicitly obeying that law which we have acknowledged and promulgated; viz. that "consonance is preceded and consequently generated by dissonance."

§ 40. The authors of grammars, methods, and treatises, have hitherto established a more or less diffuse doctrine of inversions, and given names to each of them, considering them as distinct from the direct chords. None of those writers fail to begin by promising that his work is going to save the student the trouble of fixing in his memory that numerous series of chords which make the study and the practice of harmony, counterpoint, and musical composition, so difficult and perplexing: but, alas! not one of them arrives at the half of his book without having gradually, and by one platoon after another, imposed upon his readers, as indispensable, the long rabblement of all the chords hitherto manufactured.

Mr. Catel, in his chapter of Inversions, gives his explanations by means of the scale of *Do*, but no longer (notwithstanding their promised universality) with the chords which we have analysed in the preceding §. He therefore does not explain the perfect chords major and minor with *Sol, Si, Re,* and *Re, Fa, La,* but with *Do, Mi* flat, *Sol:* which is, in fact, acknowledging the truth of the Geneuphonic theory; viz. that resonance, by first generating the major mode, and the dissonances of the seventh and ninth, is precadencial, and compels us to the necessity of seeking for the true tonic chord four degrees above the generator *Sol;* viz. in the generator *Do.* Our Geneuphonic cyphering, moreover, has rendered the doctrine of inversions quite superfluous; and public experiments have completely proved, that, taken for the sole guidance, it produces from the first day the same results that could be expected from the fullest knowledge of the whole of the various legions of chords, only useful henceforth for the fabrication of thick volumes. See Berton's Dictionary of Chords, in EIGHT volumes, 4to; and there you will find thousands of chords not contained in that one which *contains them all!!*

A COMPARATIVE HARMONIC TABLE





§ 41. We now come to the use of the chord of the *seventh on the sensible*, which is our false precadence.

7 2 4 6·
Si, Re, Fa, La♮.

The adepts of the Geneuphonic theory manage that sonorousness with the same facility and certainty of success as they use the neutral precadence, alternating it with the cadence, in the major mode exclusively. And they cannot, indeed, run the smallest risk of a mistake; seeing in the chord, as they do, the number 6·, the dot of which indicates that it is major.

Mr. Catel, in the fourth chapter of his work, presents a special example, with this title: "Use and Management of the Second of the Minor Mode, without Preparation."

Let us say, by the by, that it is one of the great many not contained in the one that contains them all, and let us examine it.

The following is Mr. Catel's example with the Geneuphonic cyphering and explanation:

	Do♮ 1 8ve.	Si♭ 7*.	Do♮ 1 8ve.
	Sol♮ 5.	Sol♮ 5.	Sol♮ 5.
2nd	Mi♮ 3·	Fa♮ 4.	Mi♮ 3·.
	Do♮ 1.	Re♭ 2*.	Do♮ 1.
	⋮	⋮	⋮
Keys. ...	Do.	Do.	Do.
Chords...	C.	N. P.**	C.

There is in this chord a problem quite unresolvable by ancient science, even in its actual state. The new doctrine resolves it as easily and surely as all others. The numbers which we have put to the four sounds of the chord before us, denote that they are the four notes of the neutral precadence (2, 4, 5, 7); whence all the following consequences are immediately drawn:

1st. That this chord belongs to the major mode, which is the mode of the cadence; that both precedes and follows it (*Do* 1, *Mi* 3· major, *Sol* 5, *Do* 1 8ve.); because there is no association of key and mode (viz. modo-tonic) where there is no rest possible.

There is, really, no rest possible either within the chord in question, or to be got at through it. No precadencial chord, besides, can ever be a final or resting chord. It is erroneously stated,

therefore, by the learned author, that this chord belongs to the minor mode.

2nd. That the syllabic names of the notes are an unerring guide with regard to the knowledge of the number that belongs to each note; and of the nature or composition of any chord, however intricate or extravagant it may appear. Indeed, we have taught that, in every key, each note keeps the same number, whatever be its alteration by flat, natural, or sharp. Consequently, as, in the key of *Do*, the notes *Re*, *Fa*, *Sol*, *Si*, are set forth by the chord under analysis, no one can doubt for a moment that their numbers are 2, 4, 5, 7; and it is at once perfectly plain that the *Re* and the *Si* (*Re* flat * and *Si* flat *) are adulterated by being lowered a semitone, and are undoubtedly articulating a precadencial sonorousness, and, not less undoubtedly, an imperfect one. Moreover, is not this chord the same which we have found in the 16th destruction of the harmonic root, page 268 of this volume? Mr. Catel's doctrine, then, which is the one adopted and taught, to this very day, by the musical writers in highest repute, is erroneous, useless, contradictory, and thoroughly difficult and vague. If so, we indulge in the belief that the Geneuphonic theory will be found quite the reverse.

3rd. From the evidence of the two foregoing observations emanates the evidence of this. In order to be able to consider the chord alluded to as modo-tonic minor, as Mr. Catel wishes, it must be previously acknowledged as cadencial. In this case, the chord which precedes it should be considered as precadencial of the key of *Fa*, and be cyphered as follows: *Do* 5, *Mi* 7, *Sol* 2, *Do* 5. Mr. Catel, therefore, owns our doctrine; viz. that the major cadence of *Do* is precadencial of *Fa*. The cyphering of his chord will consequently be

Re♭ 6, Fa♮ 1, Sol♮ 2, Si♭ 4;
* * *

and it does, under this metamorphosis, muster three precadencial notes, 6, 2, 4, against only a cadencial one, *Fa* 1.

In the theory of resonantists, accordingly, any chord, in order to belong to the minor mode, viz. to the mode of its third, need not contain the third of its own scale!!

Let us add, that, even in the benevolent hypothesis on which we venture to build this third observation, it should be requisite, imperious, indispensable, that the incomplete precadence of *Fa* should be followed by the due cadence of that key.

§ 42. In the methods of harmony and dictionaries of music at present in the hands of all, may be found—in the former, endless

nomenclatures—in the latter, scientific definitions—of the numberless chords *necessary to be known*. Is such a knowledge necessary, or entirely useless? That is the question. Let us examine it.

According to our system, an alteration is a momentary cacophony, which leads the chant or melody, through an intermedial semitone, from one consonant to another consonant sound which was at the distance of a whole degree or more from the first consonant sound. Let us say, for instance, that, after a *Sol* natural belonging to the reigning key, a *Sol* sharp be emitted, altering the preceding *Sol* natural to lead the song to the key of *La:* the alteration of the *Sol* natural will unavoidably give the character of precadencial to the chord in which it will take place; which is the sudden effect of any alteration whatever that in the least adulterates the signature placed at the clef, or falsifies any of the seven sounds proper to the reigning key. This fact confirms our assertion of the existence of analogy, but not of identity, between dissonance and cacophony. It also explains why those counterfeited precadences produced by some alteration or other in the cadence, cause in the ear a very different impression from that which it receives at the articulation of the pure precadence. We have read, in the works of Cherubini, Albrechtsberger, Berton, Catel, Weber, Logier, Castilblaze, and Reicha, that "all chords are susceptible of receiving one or more "alterations." This is true; but let us add to that truth, that no alteration can be introduced unless it be preceded by the articulation of the very chord which it is going to alter. In short, the smallest alteration produces either a transitory modulation, or the three fresh groups of a new key, cast in the same mould as the key just destroyed, unless the mode also be altered; cast, at all events, in the same typometer, and to be conducted by the same laws. In brief, all the nomenclatures now extant of altered chords are superfluous; and nothing is more completely exact, with regard to this matter, than the Geneuphonic Rule, according to which the cyphering of the syllabic names of the notes smooths all difficulties, resolves all doubts, and explains all mysteries.

Among the most celebrated authors, there is not one who has not written that all modulations are chiefly effected through the cadence, in avoiding or interrupting it; and that, of all rules, the best is that of pleasing the ear, the delight of which is the sole object, the final aim of music; and for the attainment of which, are all the rules that have been ever made. This unanimous declaration of the greatest masters affords us a consoling hope as to the fate of a system which rests on a simple and universal principle,

which is no other than the *résumé* of the decisions of the ear converted into one single formula, by which are exactly and thoroughly known all those decisions, past, present, and future.

RETROSPECT.

ADDITIONAL §§.

43. With the preceding lines we had concluded the text of our work. After it was completely printed, however, to the end of the above sentence, the careful reperusal of this theoretical and confirmatory Treatise has suggested to us a few reflections, which it may not be useless, perhaps, to present to our benevolent reader, before we close this our last chapter: the following belongs to Haydn, Carnicer, Rossini, and other immortal masters, whose eternally beautiful compositions are the best commentary on the Geneuphonic Theory—the best confirmation of its universality and excellence.

From the study of Chapter V of the present Treatise, the pupils of our doctrine will have undoubtedly inferred (what we beg, nevertheless, to repeat to them)—that the meloharmonic typometer is a universal formula, equally true and safe for all the keys or scales of the two modes, and that it comprehends all that it is necessary to know in the practice of musical composition. We have shown how it points out either the invariable or the best march which any melody has to follow, in passing from one chord to another, throughout the whole duration of a musical sentence.

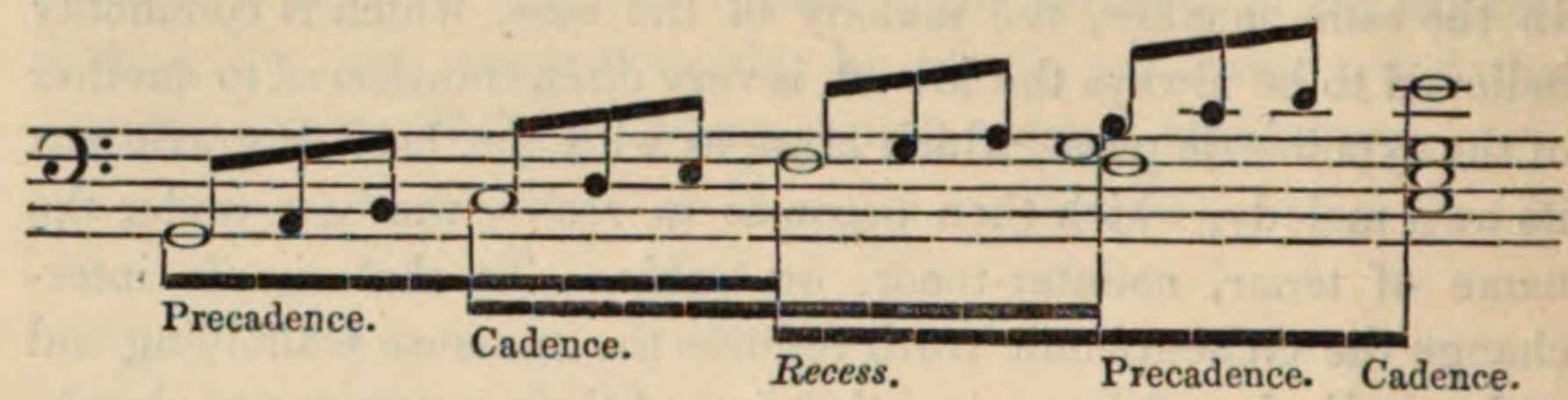
From the sole inspection of the examples written in letters, at pages 365 and 367, our readers should draw this principle—viz. that if any melody sometimes effects, in that passage, a skip greater than the one indicated in the typometer, it is because it is near changing its place in the harmony with one of the other melodies, and in the act of adopting its march; so that if the treble, for instance, takes the note 5 in the cadence instead of note 1 octave, it does nothing else than take the character and march of the counter-tenor, which it is at liberty to raise or not to its own octavism; and it follows in that way all the while that it delays returning to its own melody, which is the acute extreme of the scale.

In the same manner, the melody of the bass, which is commonly believed to be always the lowest, is very often transferred to another of the typometric parts, which changes with the bass or grave part its own melody, which then becomes in reality the bass, under the name of tenor, counter-tenor, or treble. To that simple interchange the Geneuphonic truth reduces the immense scaffolding and pedantic display of the ancient theories, of their inversions of chords, of their nomenclatures, of their special rules for every tonic (or fundamental note) on which every one of the numberless distinct chords may exclusively be grounded. Similarly, at the light of the same truth, vanish all the other phantoms and difficulties of musical composition.

§ 44. In casting a glance at what we have stated with regard to consonance and dissonance, in several chapters of this Treatise, principally in Chapters IV, VI, and XI, a farther reflection occurs to us; and it is, that we have thrown an insuperable obstacle into the foot-path traced by the celebrated Catel, and followed by most of the theorists who wrote after him—viz. by almost all the didactic writers of the present century. They have asserted that all dissonances are generated by consonance. Our answer is, that we do not understand how a son who is necessarily born after his father, can generate a father who is necessarily born before his son: that is to say, how dissonance, which those authors declare to be nothing else than the retardation of consonance, can be generated by that consonance, which is posterior to it. It would be the same thing, indeed, to say that light generates the darkness which it destroys. Let us add, that if the simple harmony (that of tonic, third, and fifth) be the only one which may be looked upon as natural, then it would result that the chords of seventh of sensible, and of diminished seventh (the neutral and minor precadence, or harmonic root), should be cacophonic, *concordia discors*, instead of merely being dissonant and euphonic chords. Such a conclusion of the dilemma admits of no more refutation. (See page 421.)

We conclude our little addition on this subject with stating, that if the system of resonance and that of a fundamental or generating bass be productive of both consonance and dissonance, it is evident that in those systems all is a mere result, but not a principle; because there is no principle in nature able to produce contraries.

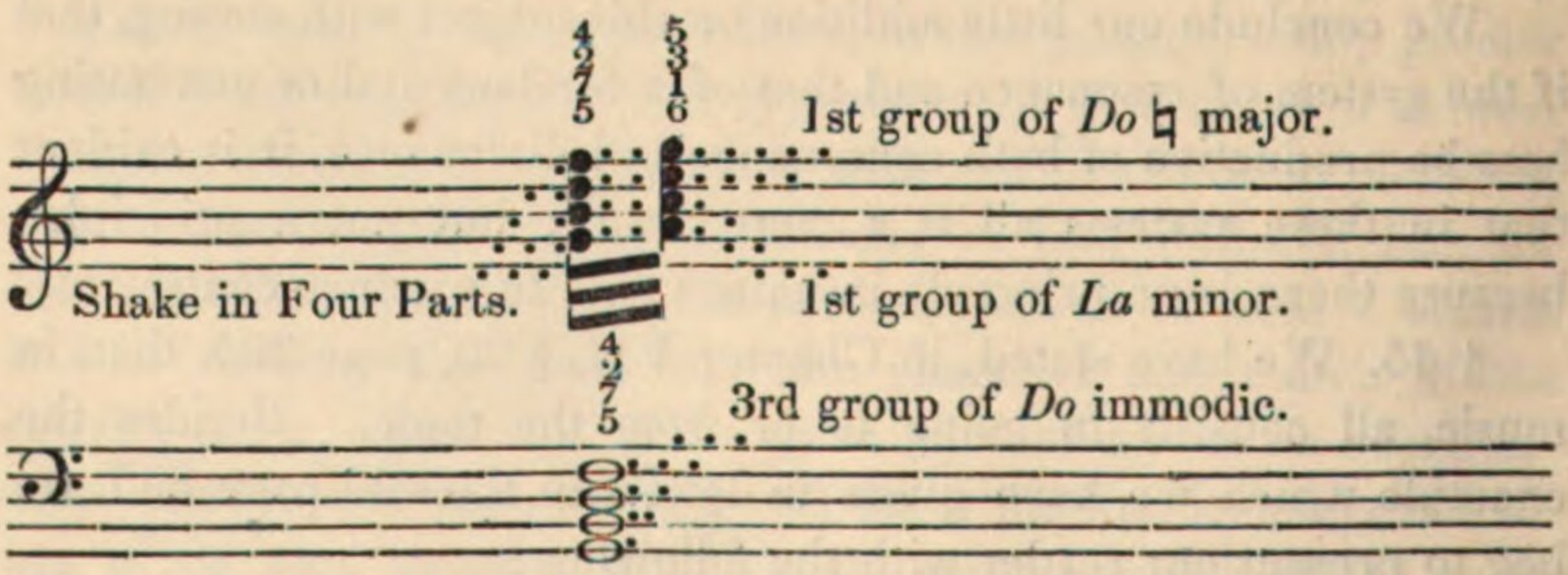
§ 45. We have stated, in Chapter VII, § 20, page 395, that, in music, all consists in going to or from the tonic. Besides the example which we have given in letters in the said page 395, we beg to present our reader with the following:



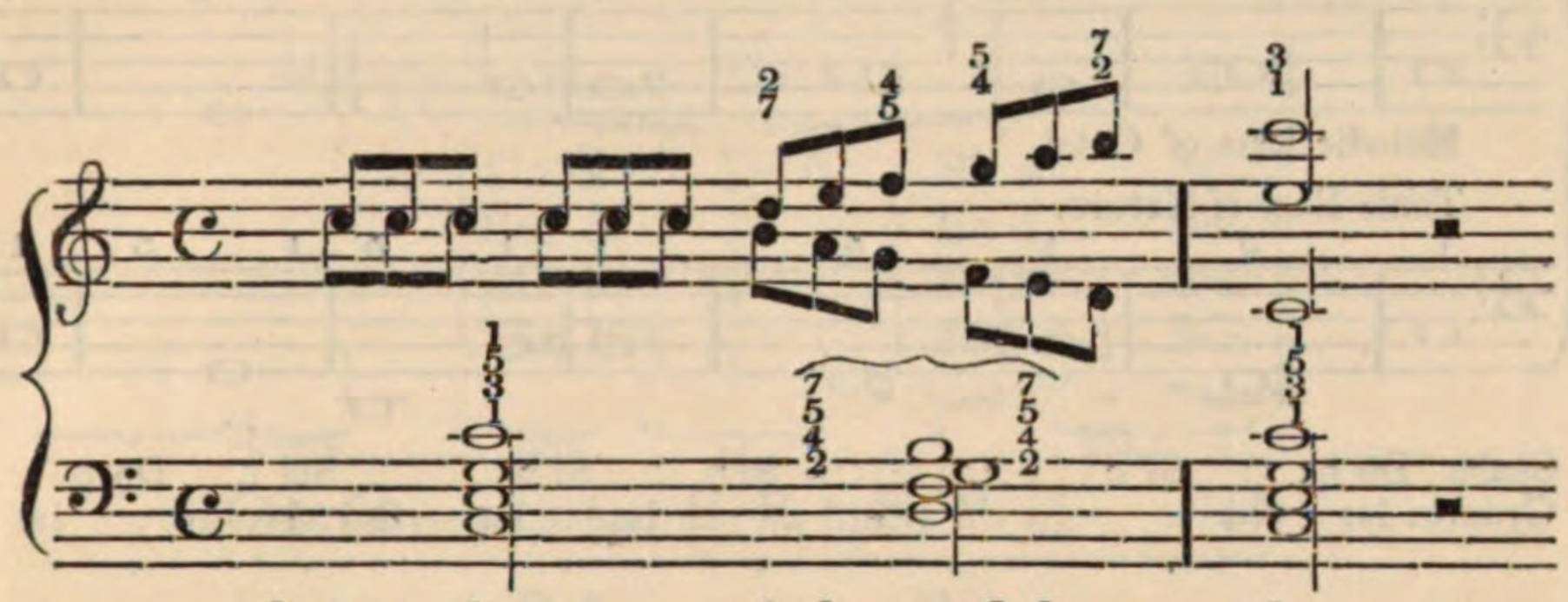
It demonstrates both the attraction and the repulsion which is invariably exercised by the tonic potency, with respect to the precadence and the transcadence; being always sought for by the former, whilst the constant tendency of the latter is to go from it; which we have marked with the word *recess*.

This example shows also how the transcadence seeks for the precadence, and, until it has incorporated itself with it, does not begin to be attracted by the tonic potency. The march of the upper melody by triplets, which begin with the precadencial one, renders it manifest that, before the existence or the appearance of the tonic, nature exhibits the presence and action of its generators, *Fa* and *Sol*, both conjoint and immodic. Every one of the thick lines drawn in the inferior part of the example shows that the three notes of the typometric or thorough bass of the key or scale are comprised in one seventh—*Sol, Fa,—Do, Si,—Fa, Mi ;*—which interval of seventh is, in harmony, a true second.

§ 46. In Chapter XIII of this Treatise, § 37, pages 440 and following, we endeavoured to complete what we had previously stated in the Elements about the Shake and the Cadenza; and our reader has perused, at page 442, an example which we wrote in letters to demonstrate that no shake can simultaneously take place in four or more parts. It now occurs to us to make this fact still clearer by means of the following example:



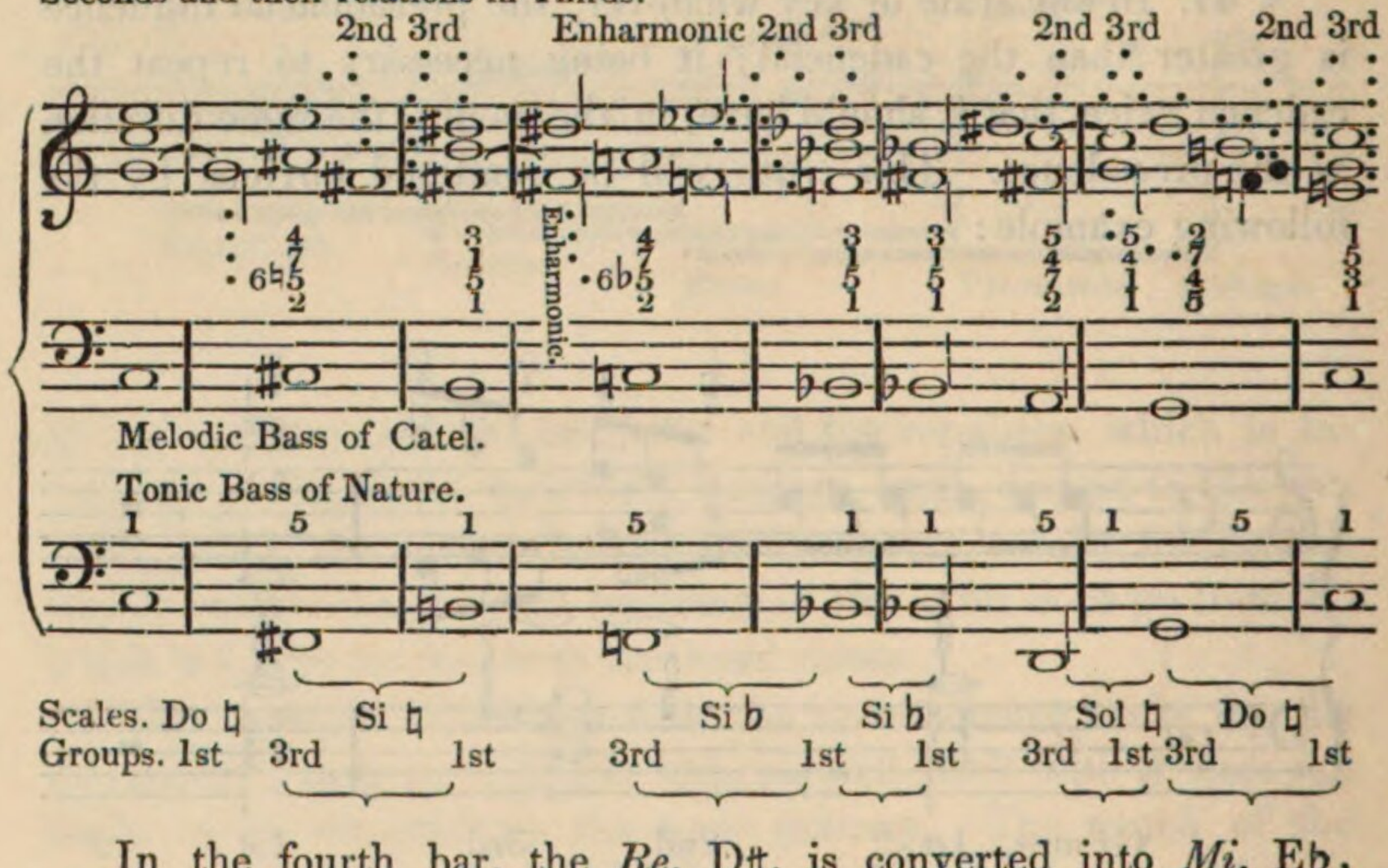
§ 47. In any scale or key whatever, the precadencial influence is greater than the cadencial; it being necessary to repeat the cadence twice, that it should have, in the gamut, the same duration as the precadence. This truth will be rendered obvious by the following example:



in which the divergent motion of the precadencial triplets shows the four precadencial notes, 2, 4, 5, 7, placed at their extremities, each of them twice. No farther cause needs be required of the ear being more vehemently affected by dissonance than by consonance; in other words, by the precadence than by the cadence; and of the rest and full satisfaction which the latter gives to it—a satisfaction and rest of which the former has bereft it, and to the enjoyment of which it can only return by means of the resolution in the cadence of the precadencial second, 4—5.

Every time that a melody enters into a new key or scale, the clashing or conjunction of two tonics, which we have so repeatedly alluded to or explicitly spoken of in this work, forms that second, 4—5, which then inevitably appears, and is the very dissonance which declares the precadence of the new-coming key. That precadence, of course, cannot be resolved but by the pure cadence 1—3—5, which, we know, never admits of the least dissonance. We do not think it useless to furnish our reader with the following example of that curious, novel, and striking fact; because we demonstrate in it the management of enharmonic equivalence:

Seconds and their relations in Thirds.



In the fourth bar, the *Re*, D♯, is converted into *Mi*, E♭, and the *Fa*, F♯, is supposed to be *Sol*, G♭; viz. the note 6 of the key or scale of *Si*, B. We request our reader to take notice, in the tonic bass of nature, which is the typometric or thorough bass, of the violent enharmonic alteration which takes place from the third to the fourth bar, where the movement of the bass is a skip of tritone, that from *Si* to *Fa*, which effects so uncouth a transition from a key signed with five sharps (that of *Si*♮), to a key signed with two flats (that of *Si*♭). Our reader will observe also, that, although from the first to the second measure the tonic bass likewise makes a skip of tritone, that from *Do*♮ to *Fa*♯, the effect of that skip is far from being so strong on the ear as that which takes place from the third to the fourth bar. The reason of this difference is, that among the notes of the chord there is no enharmonic transition or equivalence.

§ 48. No melody or song can proceed except in one of the two following ways: viz. either by passing to a sound of the reigning scale, belonging or not at the same time to another scale; or by passing to a sound of another scale, which sound will not be common both to that new scale and the reigning one. If the melody passes to a sound of the established key, which sound is also common to another gamut, the last sound which it has uttered of its own scale (the reigning one) is infallibly one of the precadencial sounds of the gamut to which the sound that it now actually utters is common. For the clearer intelligibleness of this matter, let us bring a short example, and suppose the melody to be *Do*, *Mi*. If we consider these two sounds as exclusively belonging to the scale of *Do*, it is

evident that the natural harmonization of both sounds will be the cadence of *Do ;* viz. *Do* 1, *Mi* 3, *Sol* 5, *Do* 1. But if we think proper to consider the sound *Mi* as a note belonging to the gamut and key of *Mi*, we shall say very correctly that the preceding *Do* is precadencial of the key of *Mi ;* and in that case the harmonization of the melody *Do Mi* will be as follows :

Melody.....Do.....Mi.

Do 1	Do 6	Si 5	Si 5
Sol 5	⋮	La 4	Sol 3
Mi 3	⋮	Re♯ 7	Mi 1
Do 1	⋮	Fa♯ 2	Mi 1
Keys.....Do.	⋮	⋮ Mi.	⋮
Chords..... Cad.	H. R.	N. P.	Cad.

Keys.....Do♮ ..... Mi♮.

From what precedes, our reader must not infer that this melody, *Do Mi*, or any other, is always and necessarily to be considered in the light just alluded to ; but that, in all and any movement of a melody, a precadence must absolutely be allowed for. If that precadence remains understood, the ancient theories suppose that the key has not been changed ; because no sound foreign to the reigning scale has materially and audibly been expressed or employed : and that is precisely what they call *modulatiny within the mode*, or *on the strings of the key*. Of this subject we have sufficiently treated in the foregoing Practical Treatise. Let us now simply add, that by understanding, that is to say, by omitting the precadences, the composer causes his melodies, viz. his harmony, to consist of mere cadences only, i. e. of perfect chords, grounded on the first six notes of the scale. Here is the whole secret of the unprepared or *relative* keys. It is hereby, therefore, satisfactorily demonstrated that the principle of the two only chords, *precadence* and *cadence* is the rule which governs even the *Canto à Cappella*, the *Facistol*, or church music ; though that branch of the musical art be supposed to proceed constantly through unaltered notes only. It will be better still for our reader to see this important truth confirmed in a composition of the kind that is most florid, most difficult, and most perfect—that is to say, in an instrumental quartet.

Let us, nevertheless, assert that any musical composition whatever, let its kind, epoch, nation, and author, be what they may, is

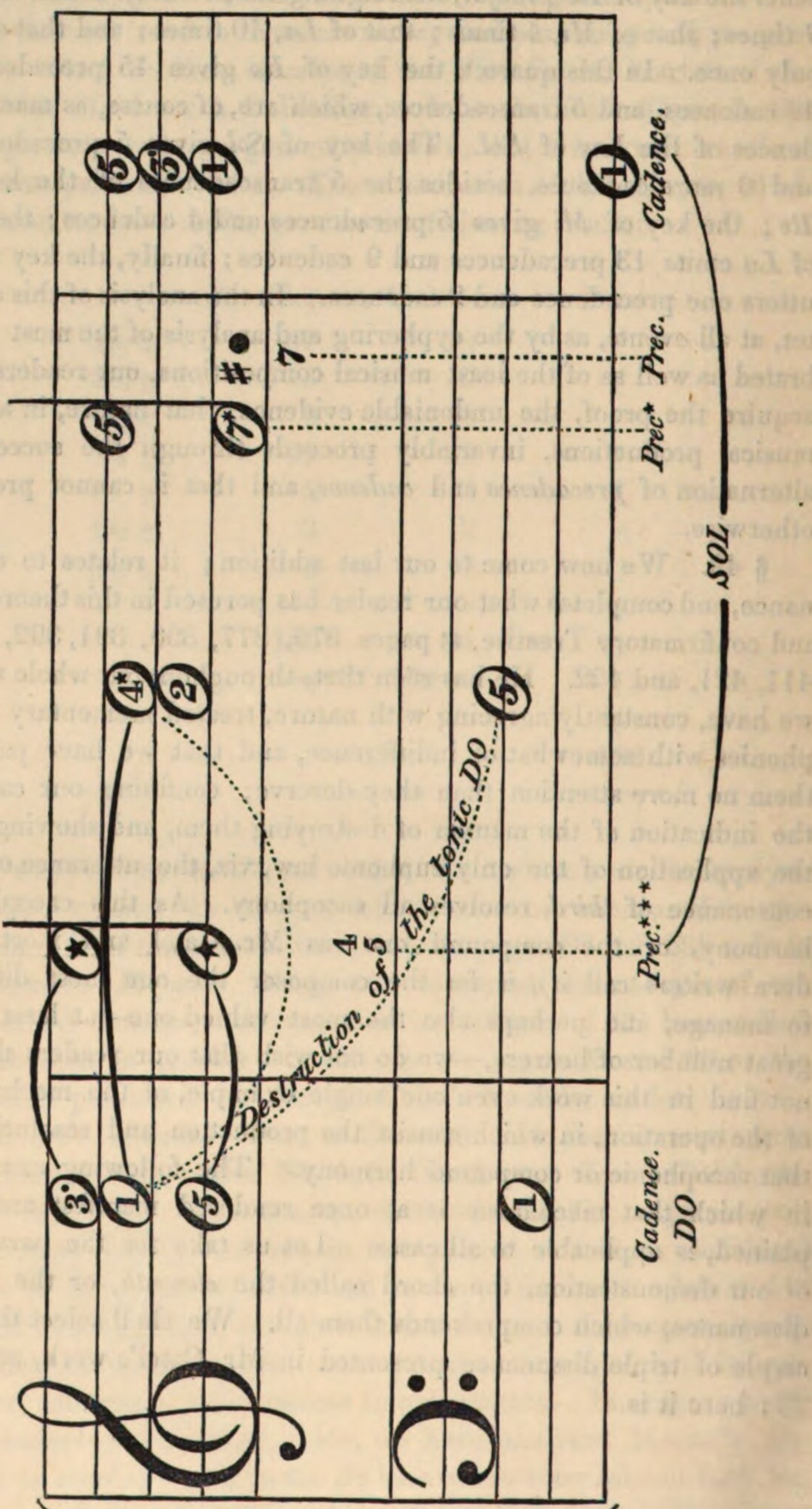
sufficient and good to afford a proof of the fact in question. In order that our readers themselves may find out this proof, we propose to select the First Quartet of the First Set of Quartets of the Op. 18th of Mozart's Collection. It is the first *Allegro* in the said quartet; and is so generally known, that it is found on sale at the principal music-sellers. The examination of this *Allegro*, which we ourselves have made, gave us the following result:

	Precadences.	Cadences.	Bars.
Re ♮	57	48	⋮
Sol ♮	5	5	⋮
Mi ♮	6	6	⋮
La ♮	27	28	⋮
Si ♮	5	2	⋮
Do ♮	2	2	⋮
Fa ♮	3	3	⋮
	105	94	⋮
⋮	⋮	⋮	⋮
7	199		193

We request our indulgent reader to submit to a similar analysis the other quartet by Mozart, which we have mentioned in the chapter VII of the present treatise, § 21, page 397 and 398. It is in Mozart's *Requiem Mass*, and comprises an *Adagio* of ten bars, called *Sanctus, Sanctus;* and an *Allegro* of 28 bars, called the *Hosanna in excelsis:* it fills up the pages 38 and 39 of the collection published by Joseph Alfred Novello, under the title of *Mozart's Masses*. Our reader will find that quartet, from beginning to end, under No. 4, in the chapter *Great Models*, the last of this work. This quartet, written in *Re*, *D* ♮ major, as well as the other already analysed in the present section, is considered as one of the most beautiful and is one of the most celebrated of Mozart's compositions, though it hands down to us a taste already so widely different from the taste of modern music, with all its successive, numerous, and immense improvements. In order to serve our readers as a constant guide, we have analysed Mozart's *Hosanna in excelsis;* and, in the 38 bars which comprehend both the *Adagio* and the *Allegro*, we have found that the whole quartet runs through the five keys of *Re*, *Sol*, *Mi*, *La*, and *Si;* that it pre-

sents the key of *Re* ♮ major, the reigning one, 16 times ; that of Sol, 7 times; that of *Mi*, 4 times ; that of *La*, 10 times ; and that of *Si*, only once. In this quartet, the key of *Re* gives 45 precadences, 49 cadences, and 5 transcadences, which are, of course, as many cadences of the key of *Sol.* The key of *Sol* gives 5 precadences, and 6 more cadences, besides the 5 transcadences of the key of *Re*; the key of *Mi* gives 5 precadences and 4 cadences; the key of *La* emits 13 precadences and 9 cadences; finally, the key of *Si* utters one precadence and 2 cadences. In the analysis of this quartet, at all events, as by the cyphering and analysis of the most celebrated as well as of the least musical compositions, our readers will acquire the proof, the undeniable evidence, that nature, in all its musical productions, invariably proceeds through the successive alternation of *precadence* and *cadence*, and that it cannot proceed otherwise.

§ 49. We now come to our last addition; it relates to dissonance, and completes what our reader has perused in this theoretical and confirmatory Treatise, at pages 376, 377, 390, 391, 392, 410, 411, 421, and 422. He has seen that, throughout our whole work, we have, constantly agreeing with nature, treated momentary cacophonies with somewhat of indifference, and that we have paid to them no more attention than they deserve; confining our care to the indication of the manner of destroying them, and shewing that the application of the only euphonic law, viz. the utterance of the consonance of *third*, resolves all cacophony. As this cacophonic harmony, or the compound one (as Mr. Catel and most modern writers call it), is for the composer the one most difficult to manage, and perhaps also the most valued one—at least by a great number of hearers,—we do not wish that our readers should not find in this work even one single example, of the mechanism of the operation, in which consist the production and resolution of that cacophonic or compound harmony. The following example, in which that mechanism is at once rendered manifest and explained, is applicable to all cases. Let us take for the paradigm of our demonstration, the chord called the *eleventh*, or the triple dissonance, which comprehends them all. We shall select the example of triple dissonance presented in Mr. Catel's work, at page 22: here it is.


Cadence.
SOL
Prec.
Prec*
the tonic DO
4 or 5
Prec.***
Cadence.
DO

It is evident that in this horrible cacophony are perceivable many more dissonances than the only three which are pointed out by the great French harmonist. We beseech our reader to attentively follow our explanation, chord by chord, of the above example.

1st *Observation.* Of the three bars of this example, the first and the third present the cadences of *Do* and *Sol*, both natural and of the major mode, which are those of the key that is left and of that which is sought for. They, consequently, offer no doubt, and suggest no observation. The second or intermediate bar, which contains the triple dissonance, gives rise to many remarks which no one has hitherto been able to indulge in, because, without the musical telescope offered by the Geneuphony, they could not be made. Let us explore those remarks, and explain all about them with the greatest lucidity, by separately examining each of the two halves of the bar.

First Half of the intermediate Bar.

2nd *Observation.* The Geneuphonic Theory shows, with complete evidence, that, in the first moiety of the intermediate bar, there is a conflict or simultaneousness of five tonogamic potencies represented six times, as follow:

Potencies	Represented by			Chords
Do ♮	Do 1	Mi 3.	Sol 5	C.
Re ♮	Sol 4	La 5	Mi 2	N. P.
La ♮	Re 4	Mi 5	,,	N. P.
Sol ♮	Do 4	Re 5	La 2	N. P.
La ♮	La 1	Do 3	Mi 5	C.
Fa ♮	Do 5	Mi 7	Sol 2	Incomplete Prec.

Now, as it has been repeatedly demonstrated in the course of this volume (*see the Alphabetical and Analytical Index, at the words Modulation and Transition*) that as often and every time a dissonance appears, it arises through a second, which begins the destruction of the reigning key, and the invasion of the key in which the two dissonant notes bear the numbers 4 and 5. In this first time of the bar, there are not only one second, but many: the established scale, which was that of *Do*, has, therefore, been destroyed. This is an undeniable fact. Now of the tonogamic potencies, which either with their precadencial or with their cadencial force have contributed to the destruction of the key of *Do*, which will remain triumphant? It is evidently the key of *Sol*. Not the least

doubt about it.—But why? Because all the other potencies have solely attacked and overcome the *Mi*, 3, and the *Sol*, 5, of the key of *Do;* whilst the potency of *Sol* has attacked, overcome, and destroyed, with its *Re*, 5, the tonic sound of the reigning key, *Do*, 1, which it has converted into *Do*, 4, stripping it of the tonic character which in it alone (the *Do*) was vested, and of which it could be stript solely by the *Re;* because no other note, except the *Re*, 5, of the key of *Sol*, had the power of transforming it into the note 4. Hence it results that in the key of *Sol* has taken place the resolution of this great and intolerable cacophony. Other keys, particularly those of *Re* and of *La*, had some right to effect that resolution towards which they had presented their precadences: they have been vanquished in the attempt by the precadence of *Sol*, because they had not attacked and converted the tonic *Do*, 1, of the reigning scale, as was executed by the precadence of *Sol*.

We may therefore proclaim the key of *Sol* as hitherto vanquisher; but the battle is not at an end; since still remains the concurrence or simultaneousness of three potencies, which, in the second time of the measure, contend against one another for the possession of the ear. For which of them will be the victory? That we shall see in the

Second Half of the intermediate Bar.

3rd *Observation.* The second moiety or the unaccented part of time of this bar, which is the time destined by musical tactics to the decisive clashing, presents the solutions of the problem by the resolution of the triple dissonance. The sounds, or notes, which we have in this second half (the arsis of the measure) are *Re* ♮, 5, *Fa* ♮, 7*, *La* ♮, 2, *Do* ♮, 4, and *Re* ♮, 5. Our reader sees that the notes *Sol* and *Mi* have disappeared, and with them the precadencial dissonances of the keys of *Re* and of *La*. Which are the two potencies that remain? It is obvious that they are that of *Re*, expressed by its cadence *Re, Fa, La;* and that of *Fa*, expressed by its cadence *Fa, La, Do*. But, what is the reach, the consequence of this fact? We have seen, in the Chapter IV, § 6, of the theoretical Treatise, pp. 356 and 357, that cacophony or the musical disorder, that the precadence even, which is the euphonic dissonance, are more perceptible than the cadence, as pain or illness is more sensibly felt than health. Well, this is now the case: the strength of the precadence of *Sol* drawn from its dissonance *Do—Re*, overcomes the weakness of the cadences of *Re* and of *Fa*, and triumphs over them; because in music, as well as in any circumstance of human life, woe to the

weak! The precadence of *Sol* alone has been stronger than two cadences, and has vanquished them in the second half of the intermediate measure with more facility than it had in the first moiety of the same bar triumphed over five tonogamic potencies together. What remains, therefore, to be done by the victorious precadence of *Sol?* One of two things: either to take no notice of the cacophonic *Fa* *, and to suppress it, which is the advice suggested by the author of this example, in consequence of the miserable doctrine of modulating within one and the same scale, and not to place at the side of the *Fa* its due sharp, for the sake even of the regularity of the sight, but to let the said sharp be understood for the sake of the ear; or, as it is our rational and consistent opinion, and as we have done in the above example, to compel the *Fa* to hoist the victorious flag, which is the sharp, and to denizen it in the empire of the key of *Sol*, by conferring on it the important office of note 7. This being done, the battle is at an end, the key of *Sol* triumphs, and its cadence which follows is the outcry of its victory. The ear is satisfied and applauds it. The Geneuphonic theory, then, without having consulted the ear, has given it that which it had longed for and claimed with impatience, without being attended to by the old school. Our intelligent reader will undoubtedly use less time to understand all the mechanism developed in the foregoing lines than we have employed to explain it. Our task is now concluded.

We think that if the present volume prevails, and is destined, as it is our conscientious hope, to supersede all the existing theories in the elementary teaching of music and musical composition, the present theoretical and confirmatory Treatise (or second part of this work) will perhaps soon become neglected (except, nevertheless, by professors); as the fortifications erected for the siege of a citadel are abandoned after it has been taken: but this is not a reason to say that both the time and labour employed in the attack have been lost, particularly when the place had for its defenders such strenuous, robust, and learned warriors, as were the advocates of the ancient counterpoint.

Explanation of the Comparative Harmonic Table.

§ 50. To conclude this chapter, the last of our own work (for the following really belongs entirely to the great masters who composed the models presented in it), we think that we can do no better than to offer to our readers a table of the due harmonic correspondence between all the instruments, and between the voices,

of which a grand orchestra may be composed, in symphonies, in operas, in one word, in all the compositions of multiple melody. This table, which exhibits at the same time the compass of each instrument and voice, will often afford to the young composer a most valuable assistance.

This table, so very useful—nay, indispensable,—in the apprenticeship to, and first essays in, counterpoint and musical composition, has been disposed in the following manner:

1stly. The wind instruments; 2ndly. the bowed and other stringed instruments; and 3rdly. the four fundamental voices of the vocal parts of a concert.

We have chosen the pianoforte of six octaves for the comparative demonstration, because it contains the whole compass of the grave, middle, and acute instruments. This demonstration takes place by means of a horizontal line drawn from the gravest to the most acute note of every instrument, as well as of each of the four fundamental voices of the harmonic system. We have, on this account, adopted the scale of *Fa* natural, major mode; because the *Si* flat is the first note that is uttered by the fagotto, the bass-trumpet, and the bass-trombone, and it is the natural key-note of both the horn and the clarion.

The noughts which are found in the progress or extent of the clarion, of the horn, and bass-trombone, point out the notes which the instrument does not produce, or are false or unpleasant upon it.

The black dots indicate the sounds which (without strictly belonging to the positive extent of the voices and instruments) may be produced: in the former, in consequence of the singer's superior physical organization; in the latter, with study, and a proper blowing or filling the instrument.

SMALL OCTAVE FLUTE and FLAGELET..... .....Clef of *Sol.*
If in *Mi b*, it is one semitone higher than the preceding.
If in *Fa*, it is two semitones higher than the preceding one; viz. a minor third higher than the small octave flute.

FLUTE.....Clef of *Sol.*

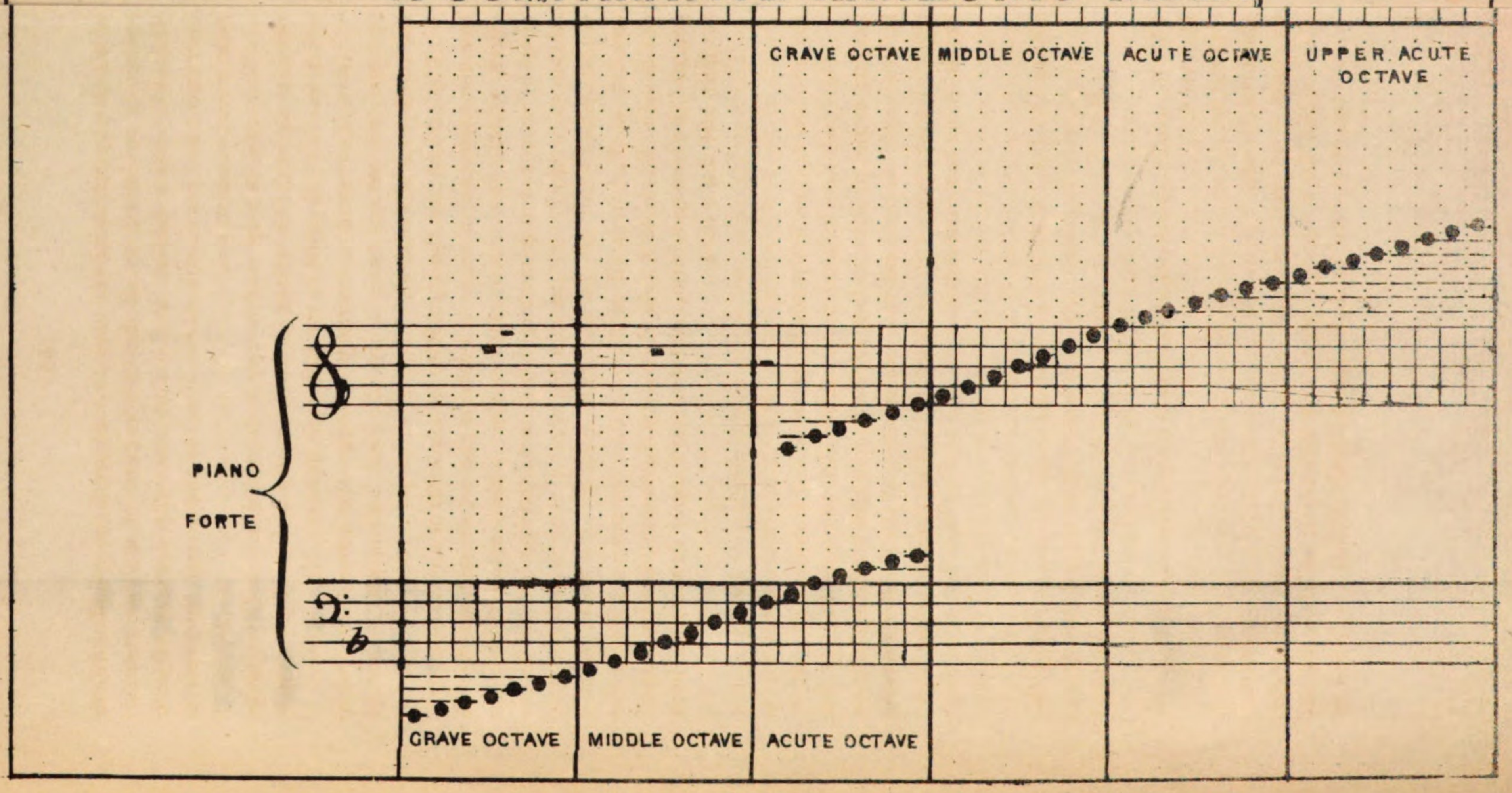
HAUTBOY.....Clef of *Sol.*

CLARINET.....Clef of *Sol.*

ENGLISH HORN.....Clef of *Sol.*

CLARION or SHRILL TRUMPET.....Clef of *Sol.*
(The keys more proper to this instrument are those of *Do* natural, *Re* natural, and *Mi* flat. When employed to

A COMPARATIVE HARMONIC TABLE.



strengthen the orchestral masses, it very often sings one octave higher than the horns.

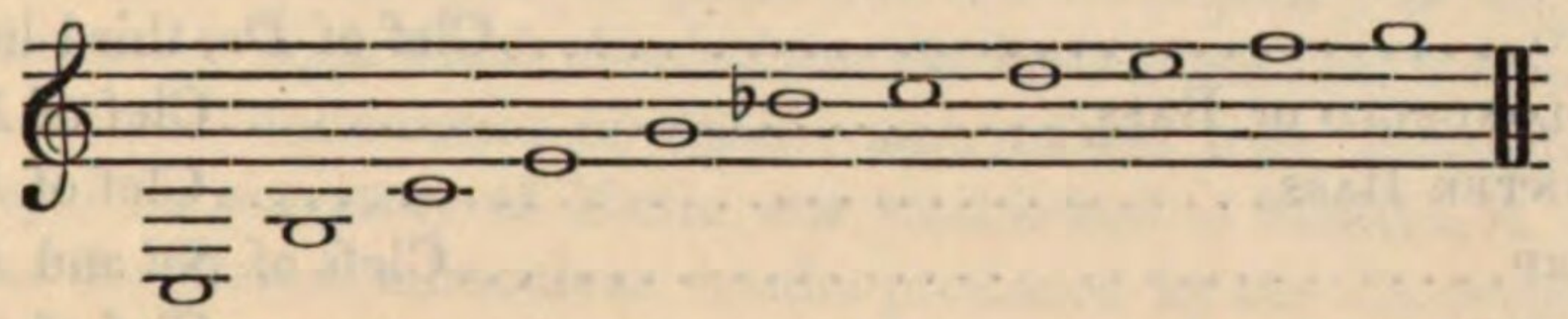
If the Clarion be in *Re*, it is two semitones, if in *Mi* flat, three semitones, higher than the above.)

KEYED CLARION.....Clef of *Sol*.

(It refers to the two kinds of Trumpet last mentioned.)

HORN.....Clef of *Sol*.

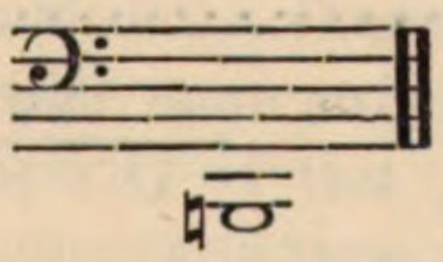
Its notes used in the orchestra are :



The same notes are uttered :

1stly. One octave lower when the Horns are in *Do*, C.
2ndly. One seventh lower when they are in *Re*, D.
3rdly. A major sixth lower when they are in *Mi*♭, E♭.
4thly. A minor sixth lower when they are in *Mi*♮, E.
5thly. A natural fifth lower when they are in *Fa*, F.
6thly. A natural fourth lower when they are in *Sol*, G.
7thly. A minor third lower when they are in *La*, A.
8thly. A major second lower when they are in *Si*♭, B♭, acute.
9thly. A major ninth below when they are in *Si*♭, B♭, grave.

FAGOTTO or BASSOON.....Clef of *Fa*.

It cannot produce the 

In its acute or upper compass, the part for this instrument must be written on the clef of *Do*, fourth line. The Fagotto is truly the proper bass of the wind instruments; and it often doubles the basses of the orchestra.

TROMBONE, ALTO or TREBLE.....Clef of *Do*, third line.

TENOR: its lower notes are written on the Clef of *Fa*; its upper ones, on the Clef of *Do*, fourth line.

This instrument sings in all keys without requiring the aid of transposition. Its part, therefore, is written like that of Violoncellos, Fagottos, and Altos; due care being taken to place the necessary accents at the clef.

BASS TROMBONE .....Clef of *Fa.*
BASS TRUMPET.....Clef of *Fa.*
BUCKSEN or SERPENT .....Clef of *Fa.*

The Serpent, like the Bassoon, utters all the notes of its extent (as they are marked) without ever transposing them.

KETTLE DRUM.....Clef of *Fa.*

Stringed Instruments.

VIOLIN.....Clef of *Sol.*
ALTO.....Clef of *Do*, third line.
VIOLONCELLO or BASS.....Clef of *Fa.*
COUNTER BASS.....Clef of *Fa.*
HARP.....Clefs of *Sol* and *Fa.*
GUITAR.....Clef of *Sol.*

Voices.

TREBLE or SOPRANO.....Clef of *Do*, first line, and of *Sol.*
CONTRALTO or COUNTER-TENOR .....Clef of *Do*, third line.
TENOR.....Clef of *Do*, fourth line.
BASS.....Clef of *Fa.*

To the above instruments we shall add the following, although we have not thought proper to include them in our Comparative Harmonic Table.

THE CHINESE BELL.....Clef of *Sol.*
THE TRIANGLE.....Clef of *Sol.*
THE ROLLING DRUM.....Clef of *Fa.*
THE CYMBALS.....Clef of *Sol.*

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§ 51. When the principal and primitive work on which the present *Geneuphonic Grammar* is grounded, viz. when the manuscript of the *Geneuphony* was presented by General Virues, its author, to the King of Spain, with a prayer that His Majesty would order the same to be printed at the national printing office at the expense of the government, the King, before charging the royal treasury with all the outlays which the printing and publication of such a work would render inevitable, appointed a commission of several learned composers, to examine the manuscript previously to heavy expenses being incurred by the state. The commission alluded to gave the award that:

" The Geneuphony is the first work that has truly revealed the " secret of nature as to what produces, constitutes, and regulates " harmony; the first work in which the law of euphony is made " evident and rationally explained, and in which the separation " and the difference between dissonance and cacophony are clearly " marked and rendered naturally obvious and perceptible to " all."

Such an opinion caused the Minister of the Home Department and Public Instruction to point out the *Geneuphony* as the sole elementary book which should form the basis of musical instruction in all the universities of Spain; and, a short time afterwards, a Royal Conservatory of Music was established at Madrid, in order that the almost miraculous results produced by the discovery and applications of the Geneuphonic System should take place in the capital of the kingdom, the usual residence of their Majesties.

After a few months of that royal establishment being in activity, the great Rossini, who had already and for many years filled the whole world with his immortal fame, was called to Madrid to inspect and improve the Conservatory of Music, and to judge at the same time the classical work on which the various branches of musical teaching in that establishment were exclusively founded. So favourable was Rossini's opinion of the Geneuphonic theory, and so completely did he approve of the award passed on that work before its impression, that he extemporally composed, in the Royal Conservatory, in presence of both masters and pupils, the canon in four parts which our readers will find in the chapter *Great Models*, under No. 8. He himself wrote for it the typometric bass; and we have added the Geneuphonic cyphering, in order to unravel and to render more striking the masterly contrivance and ingenious simplicity of that graceful composition, framed and written by the most conspicuous musical genius of our age, in honour of the Geneuphony, and as the most irrefutable, unexceptionable, and most lasting sanction of its theory. There is not, indeed, in the Geneuphonic Grammar, any more than was in the Geneuphony, a single point of doctrine that is not acknowledged, adhered to, and justified in Rossini's canon here alluded to, notwithstanding its reduced proportions. There is not one of the fundamental rules of musical composition to which the sole and universal principle proclaimed by the new theory has been left unapplied, narrow and circumscribed as were the limits of the delightful composition improvised by the learned composer.

Two months had not yet elapsed since Rossini's departure from the capital of Spain, when the King, wishing to perpetuate the remembrance of the glorious sanction given by that illustrious master to a discovery of such paramount importance to the science of music, ordered the following letter to be written to the author of the Geneuphony by the Minister of Finance, acting, in that case, in his capacity of *Private Secretary* of His Majesty, *con ejercicio de decretos*.

" *Ministry of Finance, Chief Office.*

" The King, our august Sovereign, has been pleased to order, " in answer to your Excellency's office, dated 30th of March last, " that their Majesties and Royal Highnesses have received with " the greatest esteem the copies of your work, entitled *Geneuphony*, " which you have offered to them; and that their Majesties are " sensible and satisfied of your Excellency's efforts, of the skill " with which you have contributed to establish on the best basis " and footing the Conservatory of Music, and of the advantages " which will be due to the *new theory*, which will afford so much " glory to your Excellency and to the nation to which the musical " world is to be indebted for your discovery, so eminently useful to " all those who may study, either as amateurs or professors, the " noble science and art of music. In proof of his royal satisfaction, " His Majesty has deigned to ordain that your Excellency's merit " shall be recommended to the First Minister of State (which I " execute with this day's date), in order that, through that depart- " ment, an elevated rank in some Royal Order of Knighthood, or " any other royal favor, may be conferred on your Excellency, " according to His Majesty's pleasure.

" By royal order I communicate to your Excellency the preced- " ing information, for your Excellency's knowledge and satisfaction.

(Signed) " Luis Lopez Ballesteros."

" *Madrid, April* 28, 1831.

" *To his Excellency the Adjutant General J. J. Virues y Spinola.*"

On the 26th of the ensuing month of July, the First Secretary of State, Minister for Foreign Affairs, sent to General de Virues, with a most flattering letter, written by royal order, the diploma of Knight Grand Cross of the Royal Order of Isabel the Catholic.

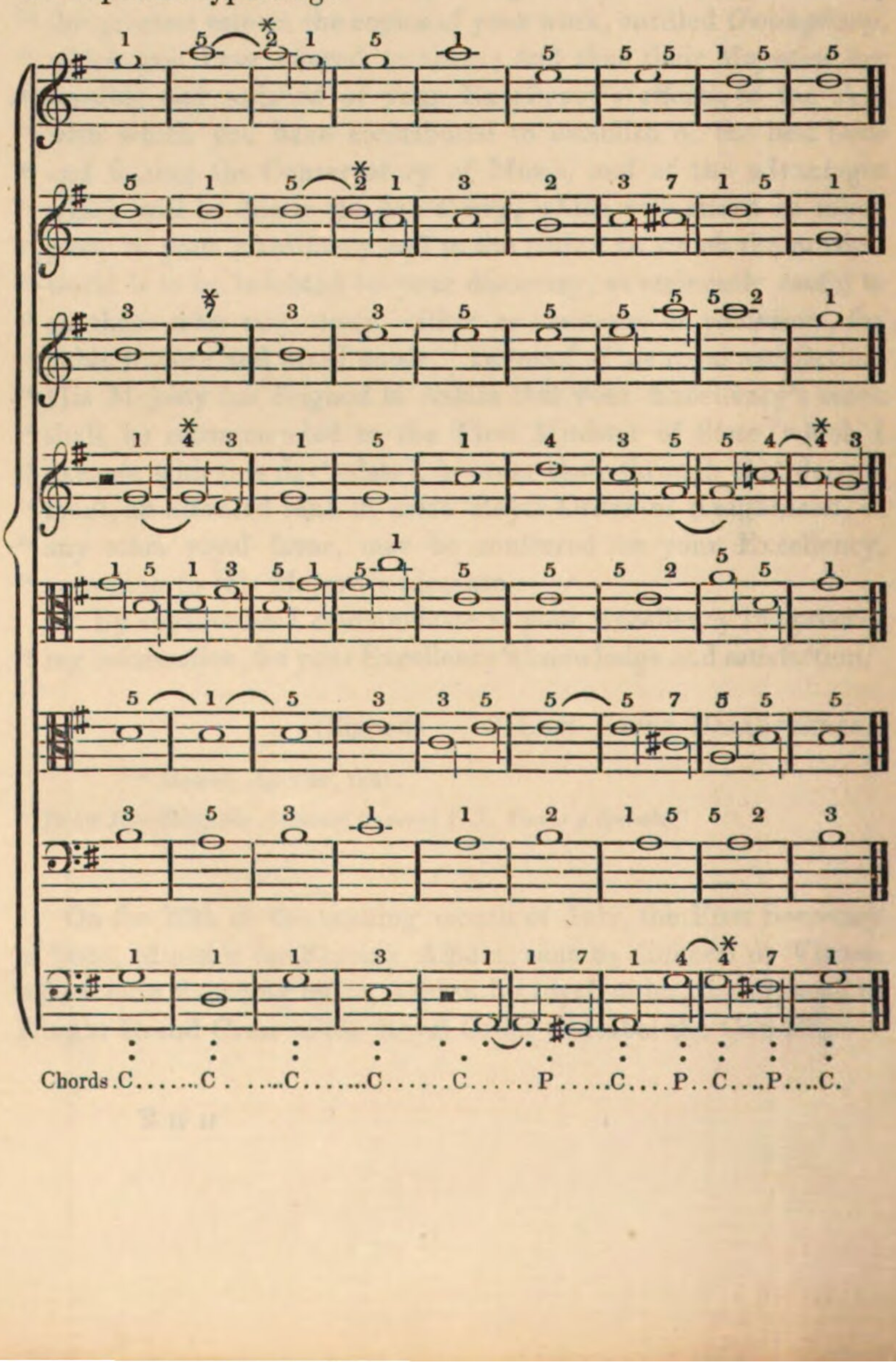
To conclude: Let us add to the simple narrative contained in the present §, that, in Spain, in France, in England, the learned theorists and great composers, Gonzalvi, Carnicer, Federicci, Doyagûe, Piermarini, Oehoa, Ferrari, De Begnis, Moretti, Zamora, Berton, Boieldieu, Fétis, Halevy, Zimmerman, Engelback, Dr. Busby, Bochsa, Curioni, Stockhausen, Latour, Ball, Sola, Müller, and several others whose names are not present in our memory, gave their most positive sanction to, and entire approval of, the Geneuphonic Theory, when it was only resting on the principal and merely fundamental proofs of its universality and excellence, but was still very far from being in the classical and didactic order, in the state of perfect completeness and lucidity, in which it is presented in this volume.

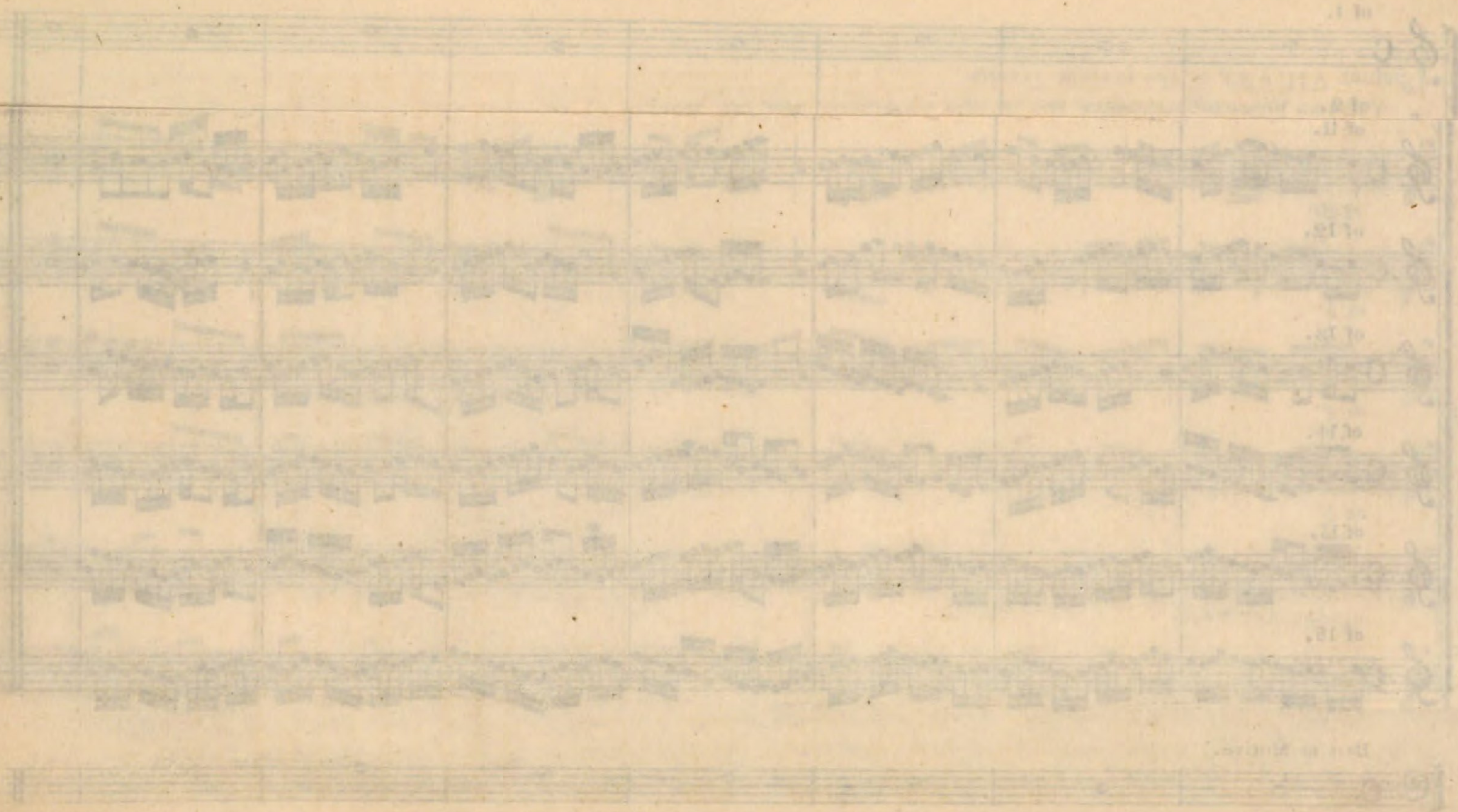
CHAPTER XV.

GREAT MODELS.

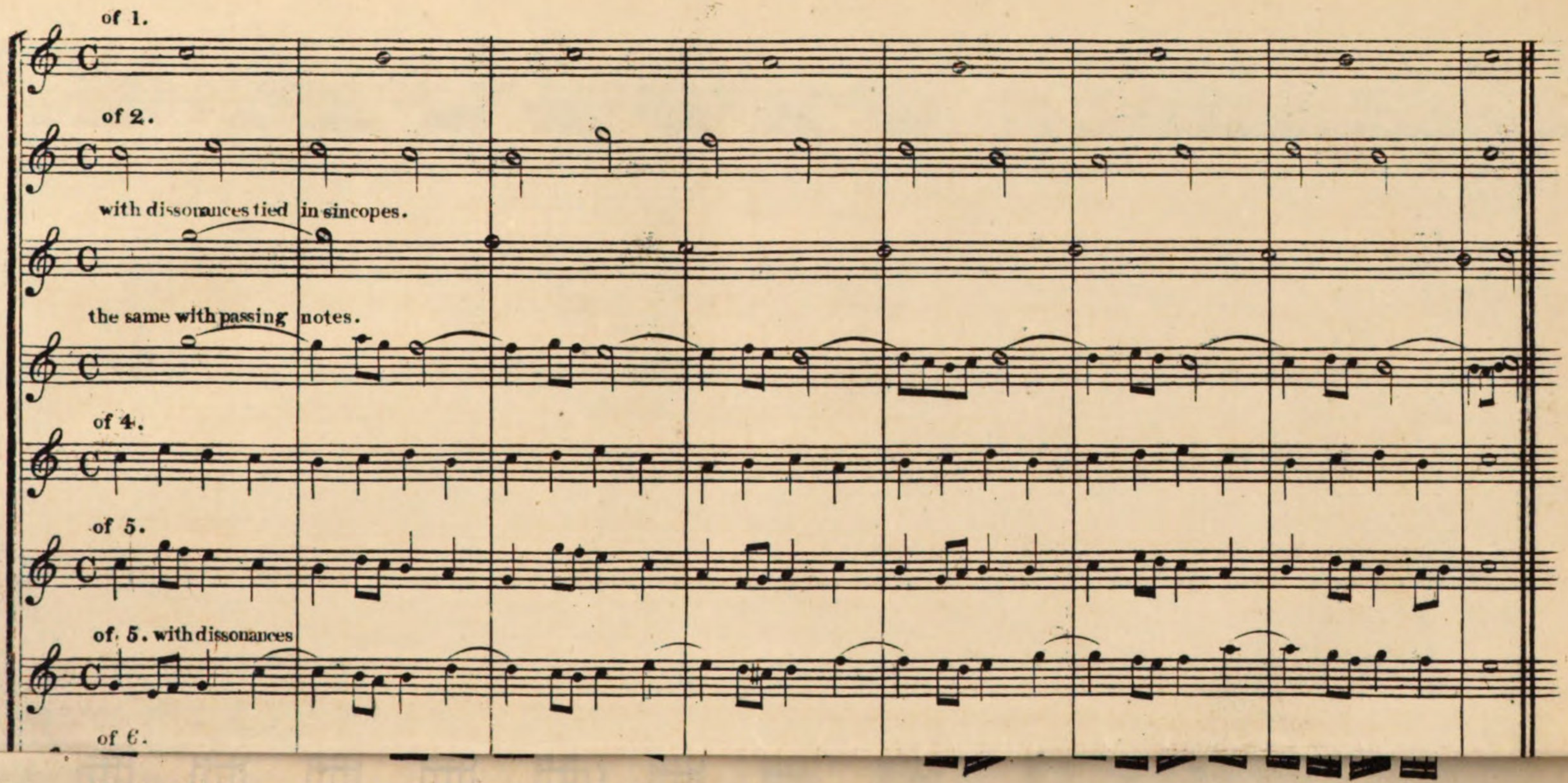
§ 52. This last chapter consists merely of the collection of several master-pieces, selected from those which are universally admired as such, and which we consider necessary to complete the set of models presented by us, in the course of this work, for the imitation of our readers, as adequate both to form their musical style, and improve their natural taste.

The following example is a counterpoint in eight parts, composed by the learned Mr. Reicha, to which we have added the Geneuphonic cyphering :





Example No. 2.



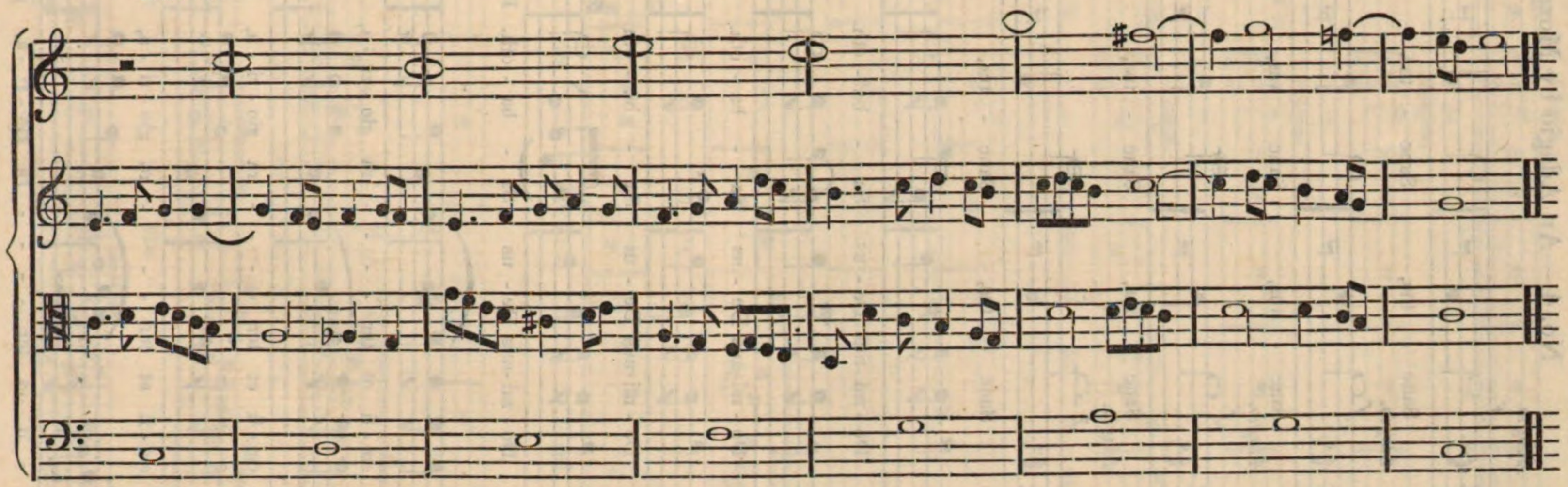
Bass or Motive.

(to face page 469)

The example No. 2 exhibits nineteen counterpoints, from one note against one to sixteen notes against one. It is due to the skilful pen of the celebrated Spanish composer, *el Maestro Carnicer,* whose creative genius has invented so many ravishing and popular melodies. These counterpoints are all composed on the same bass motive on which are grounded most of the examples contained in the Chapters XI to XIX of the Practical Treatise. (See Ex. No. 2)

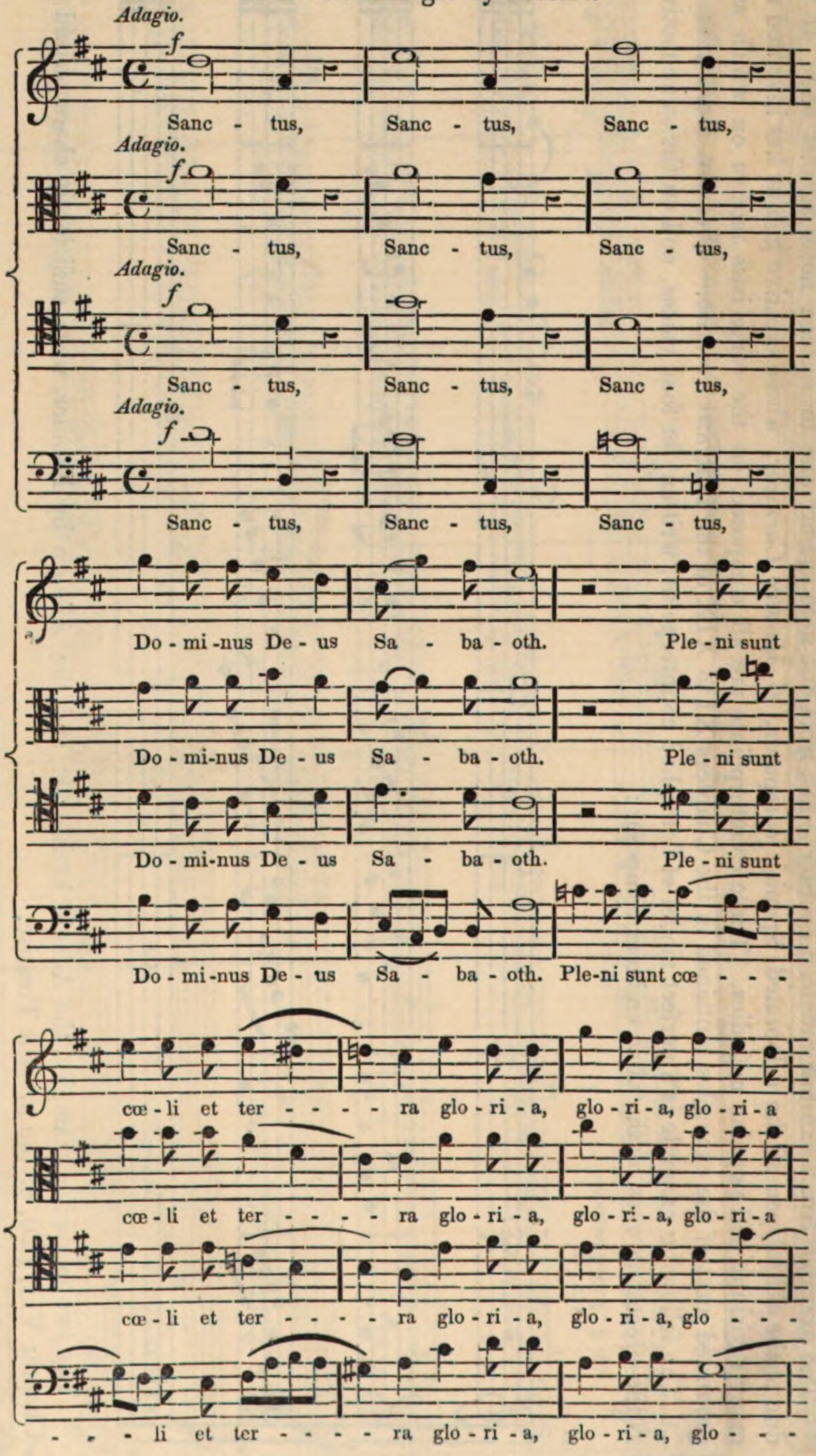
The following example is a perfect model of flourished counterpoint, written for four voices, and on the same motive as the preceding ones by the same eminent composer :

No. 3.



The two following examples, the Adagio by Mozart, and the Allegro by Kromer, were sufficiently characterised in Chapter VII, § 20, of the present Treatise.

No. 4.—An Adagio by Mozart.



Allegro.

tu - - - - - - - a.

Allegro.

tu - - - - - - a.

Allegro.

ri - a tu - - a.

Allegro.

ri - a tu - - a. Ho - san - na in ex - cel - - -

Ho - -

Ho - san - na in ex - cel - - - - - - - - - -

- - - - - - - - - sis, Ho - san - na in ex - cel - - - -

Ho-

- - san - na in ex - cel - - - - - - - - - -

- - - - - - - - - sis in ex - cel - - -

- san - na in ex - cel - - - - - - - - - sis, Ho -

- - - - - - - - sis, Ho - san - - - - - - - na in

- - - - - - na in ex - - - - - - - - - - - - - - - -

- - - - - - - sis, Ho - san - na

- - - - - - - san - - - - - - - - - na in ex - cel - sis,

- - - - - - - - - - - - - - - sis,

- - sis, Ho - san - na in ex-

in ex - cel - - - - - - - - - - - - - - - - sis, Ho-

Ho - - san - na in ex - cel - - - sis.

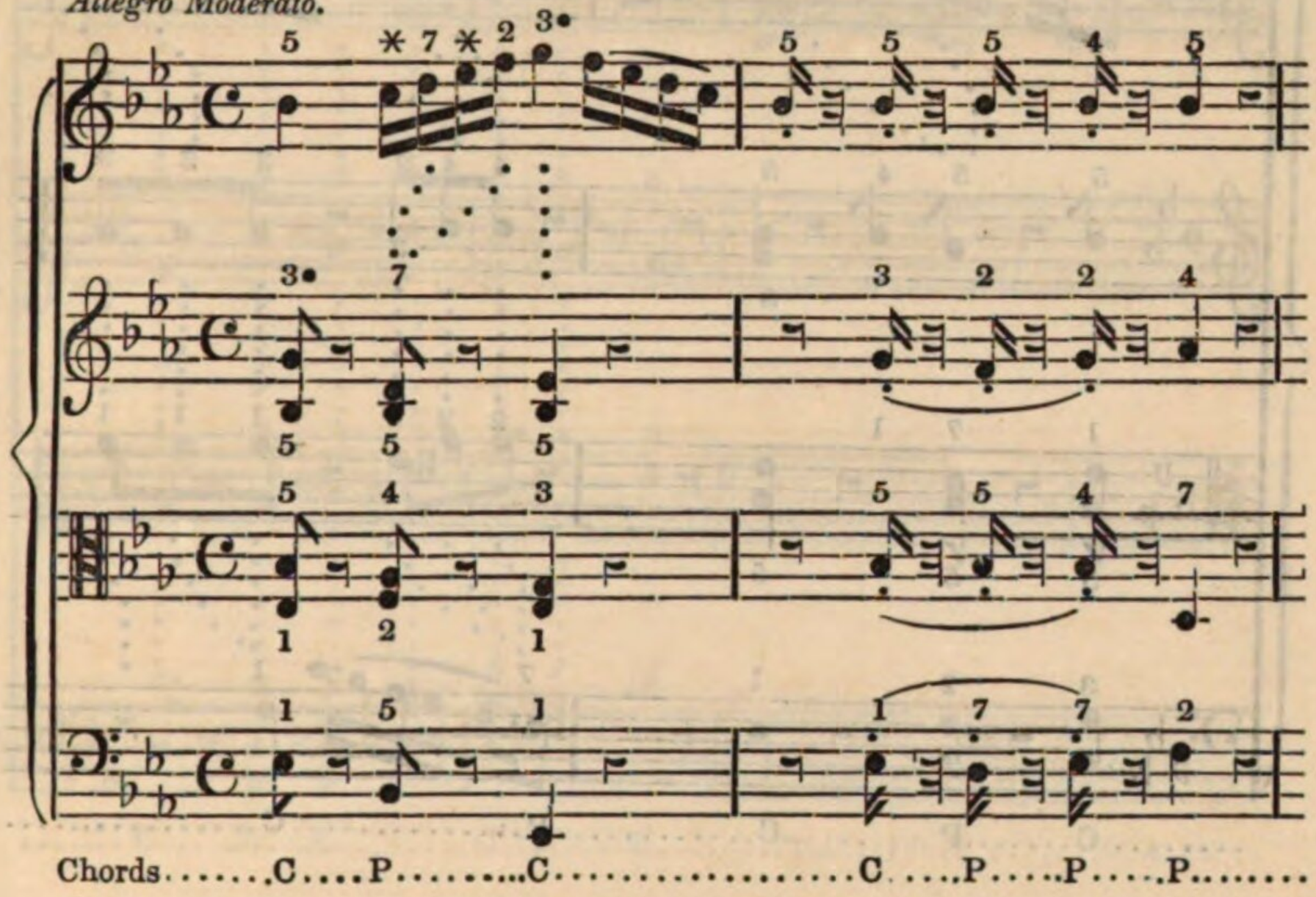
Ho - - san - na in ex - cel - - - sis.

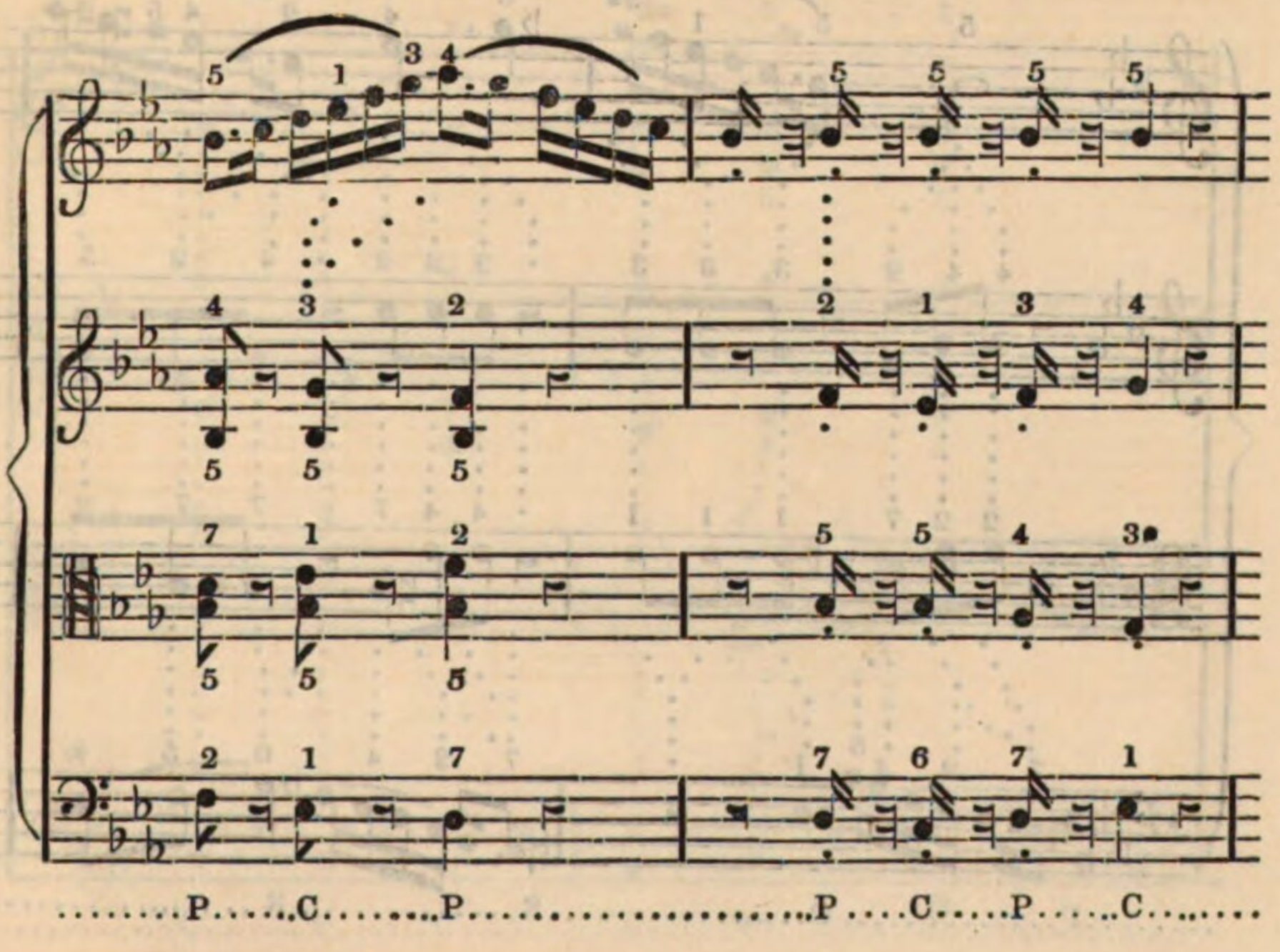
cel - - - - - sis, in ex - cel - - - sis.

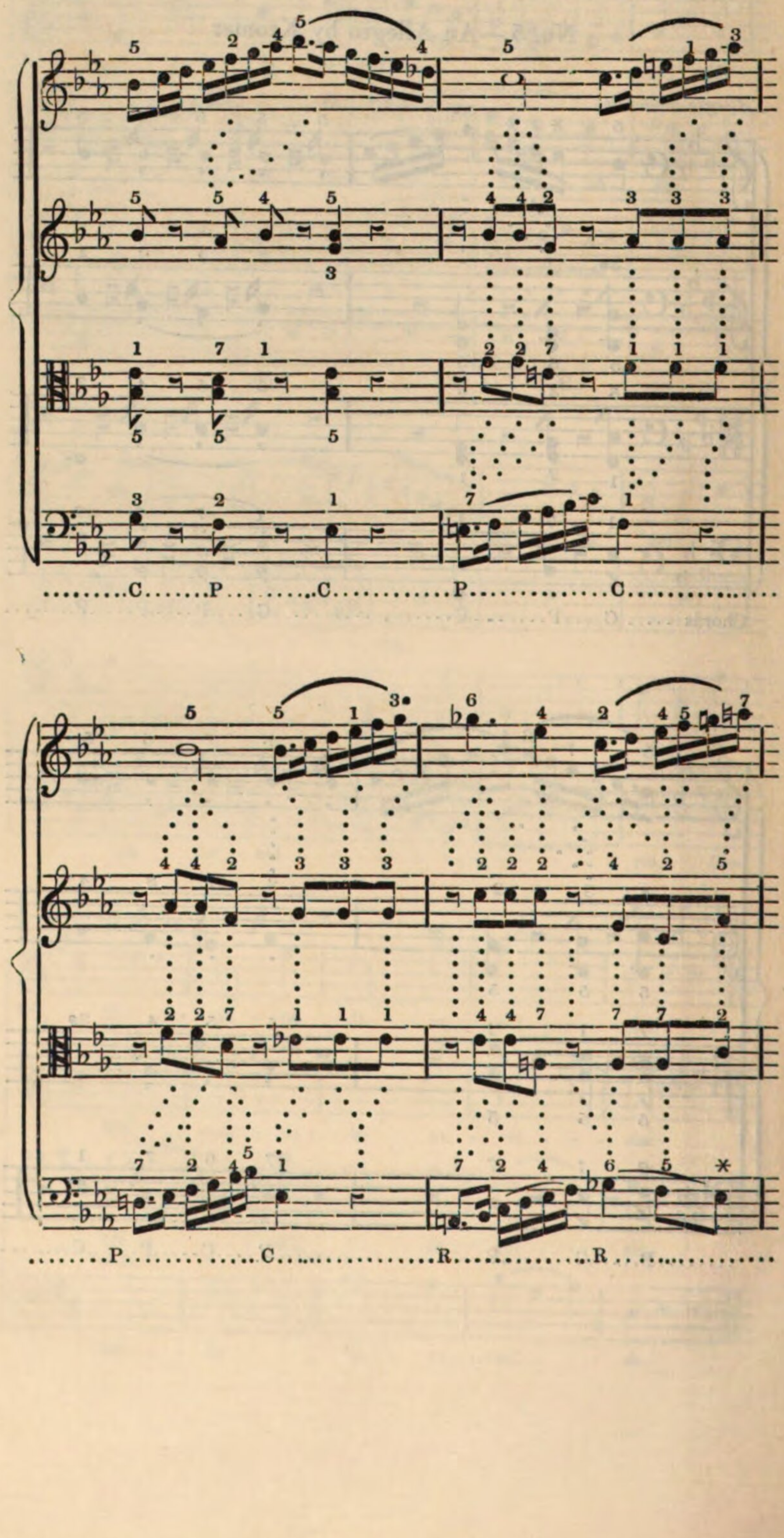
san - - na in ex - cel - - - sis.

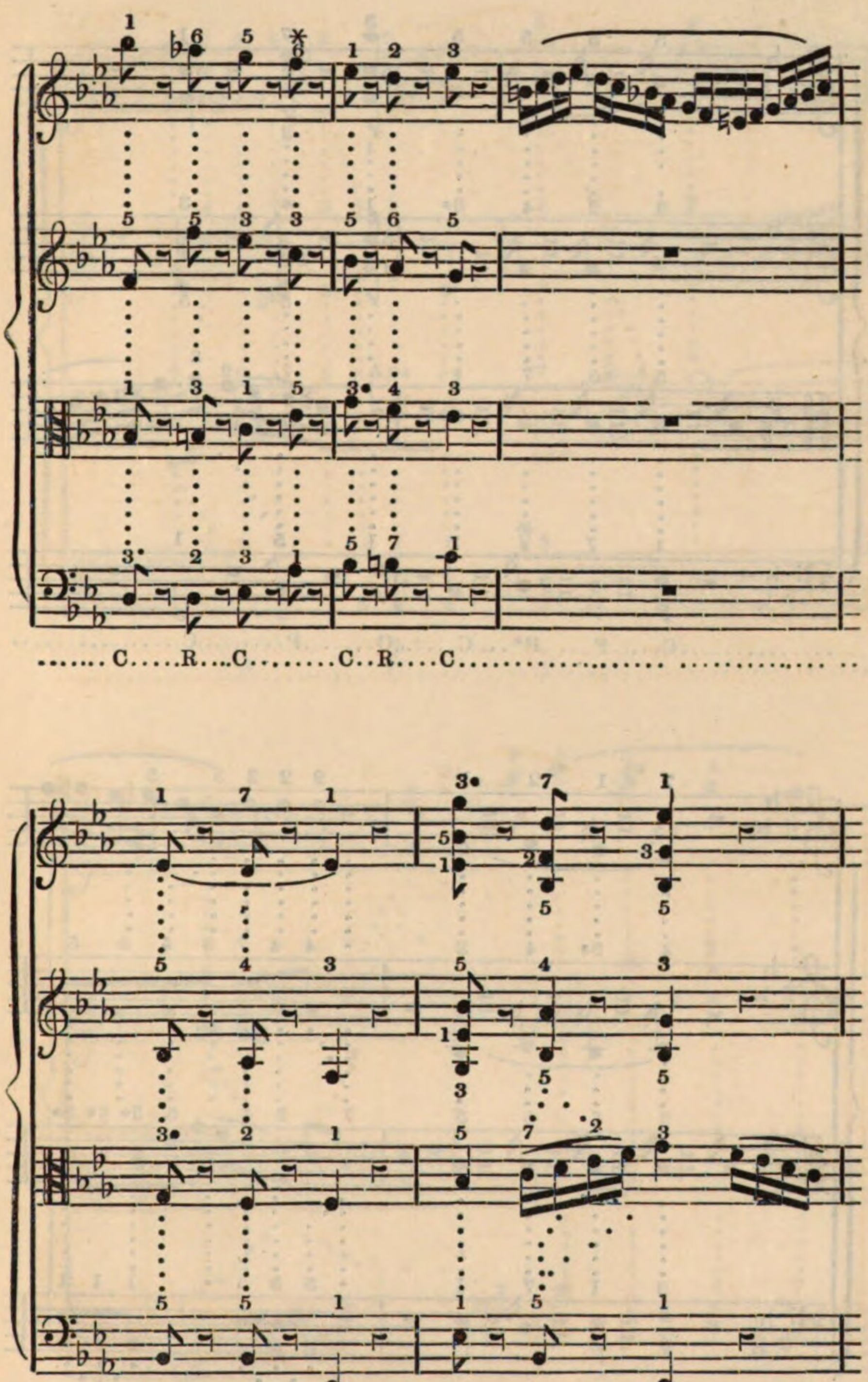
No. 5.—An Allegro by Kromer

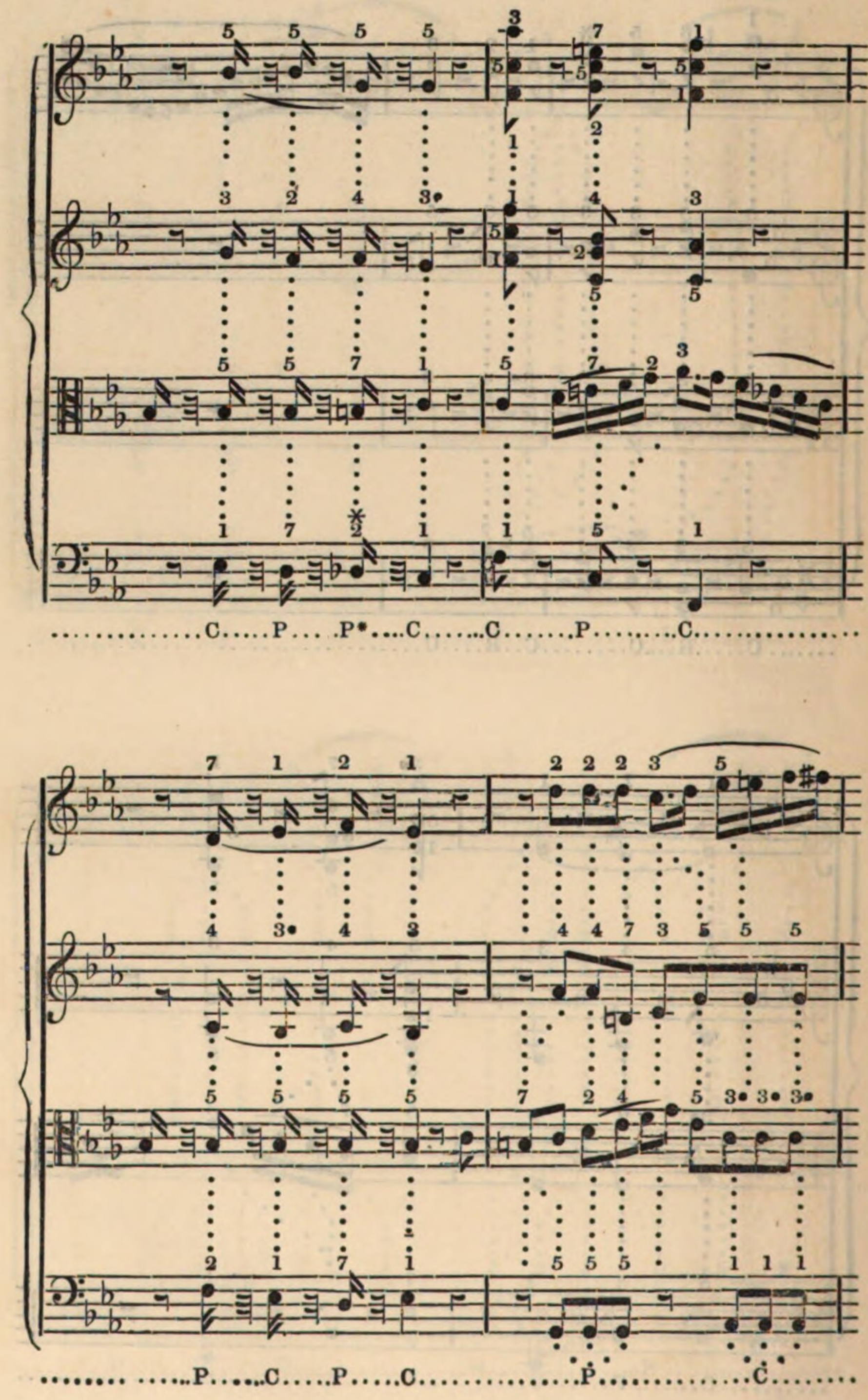
Allegro Moderato.

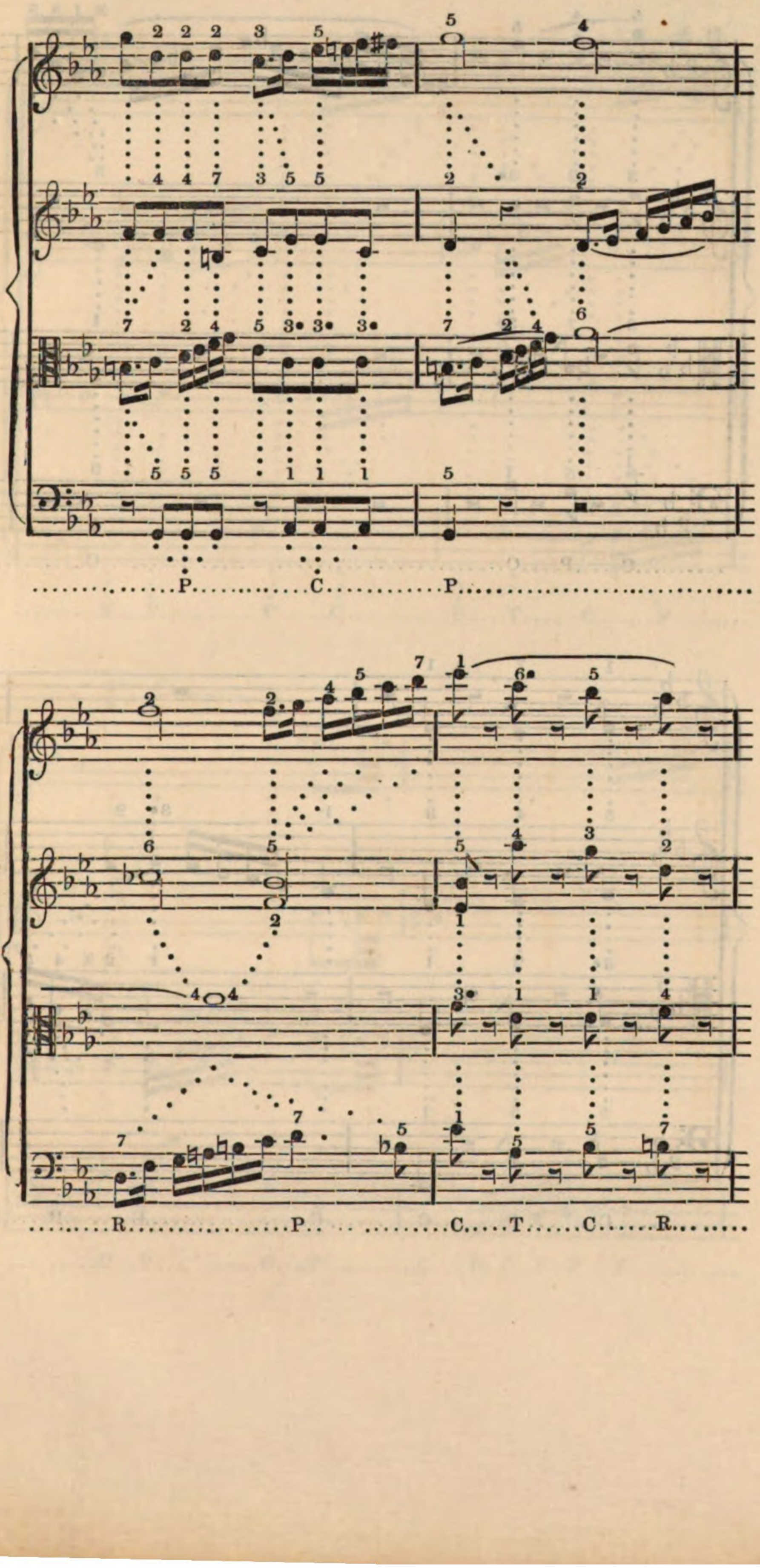


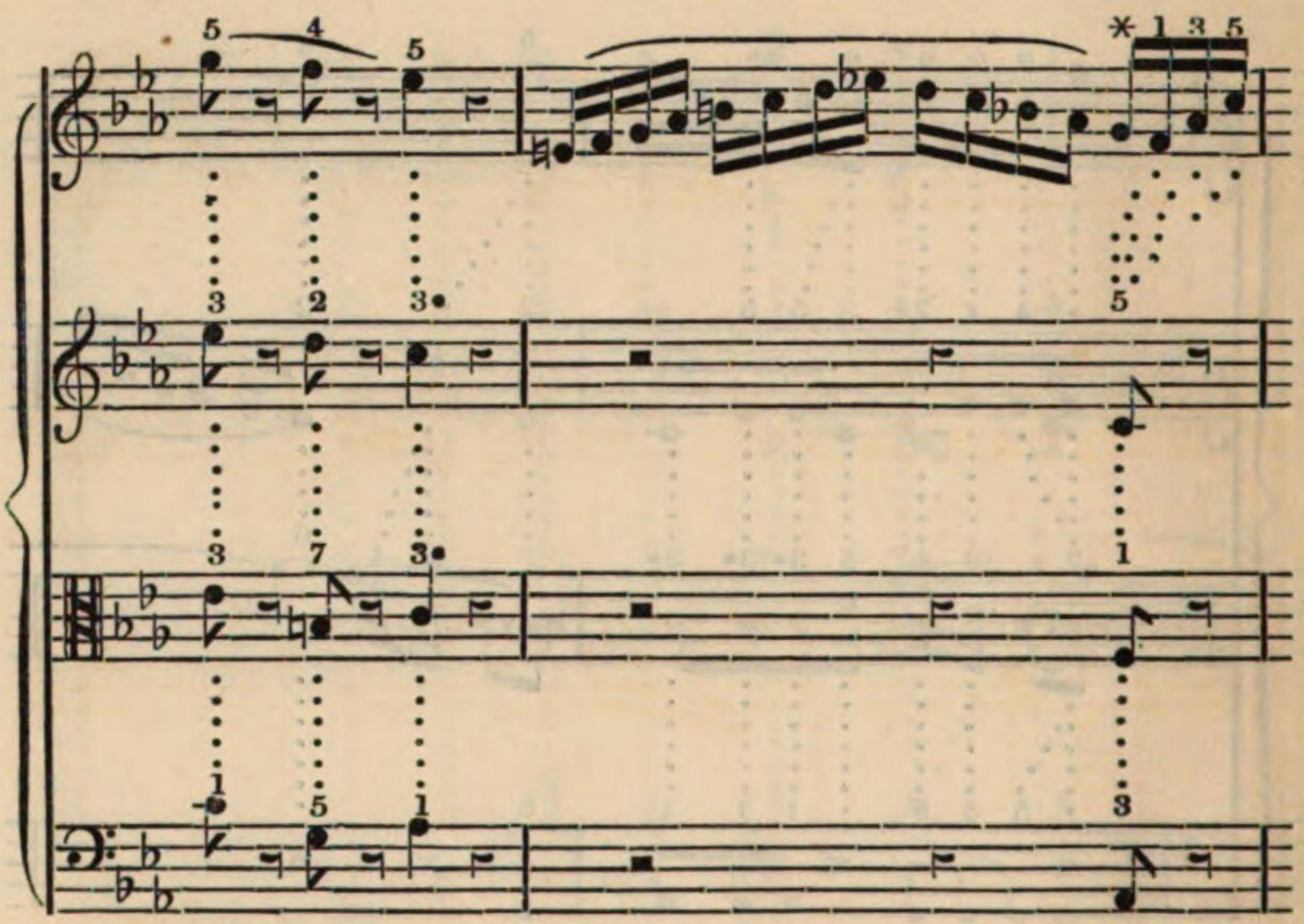


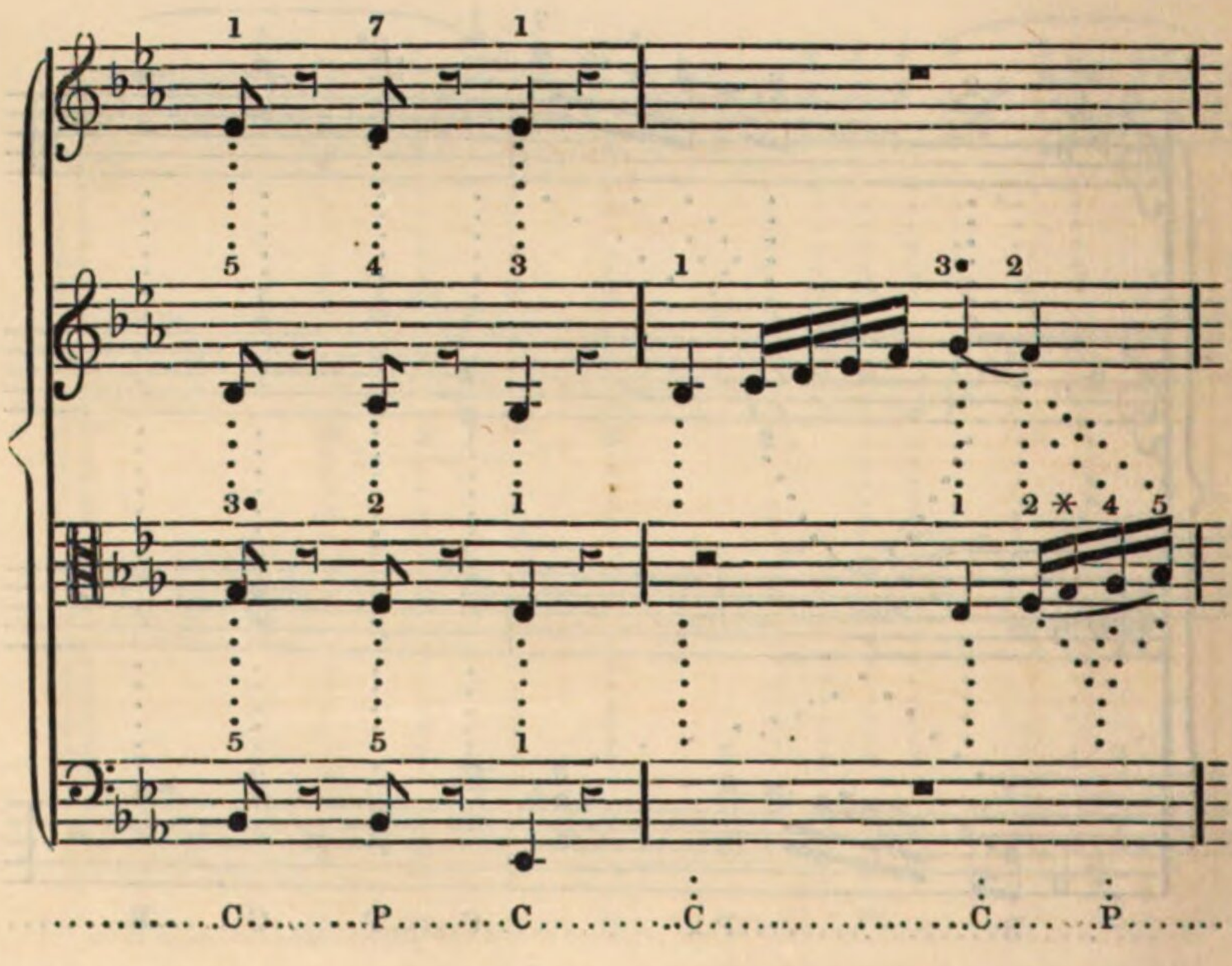

C P C P C
P C R R

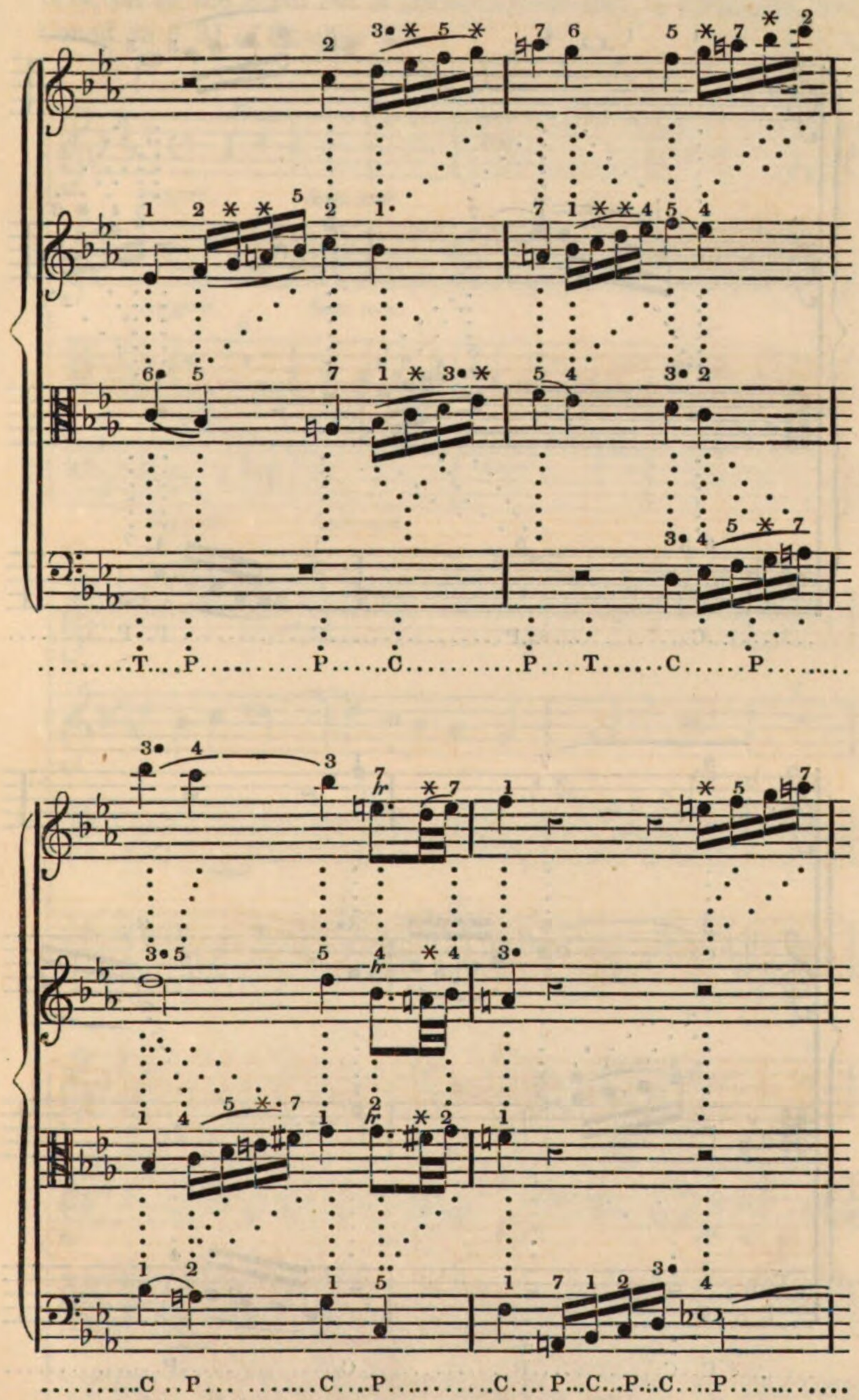

C R C C R C
C P C C P C

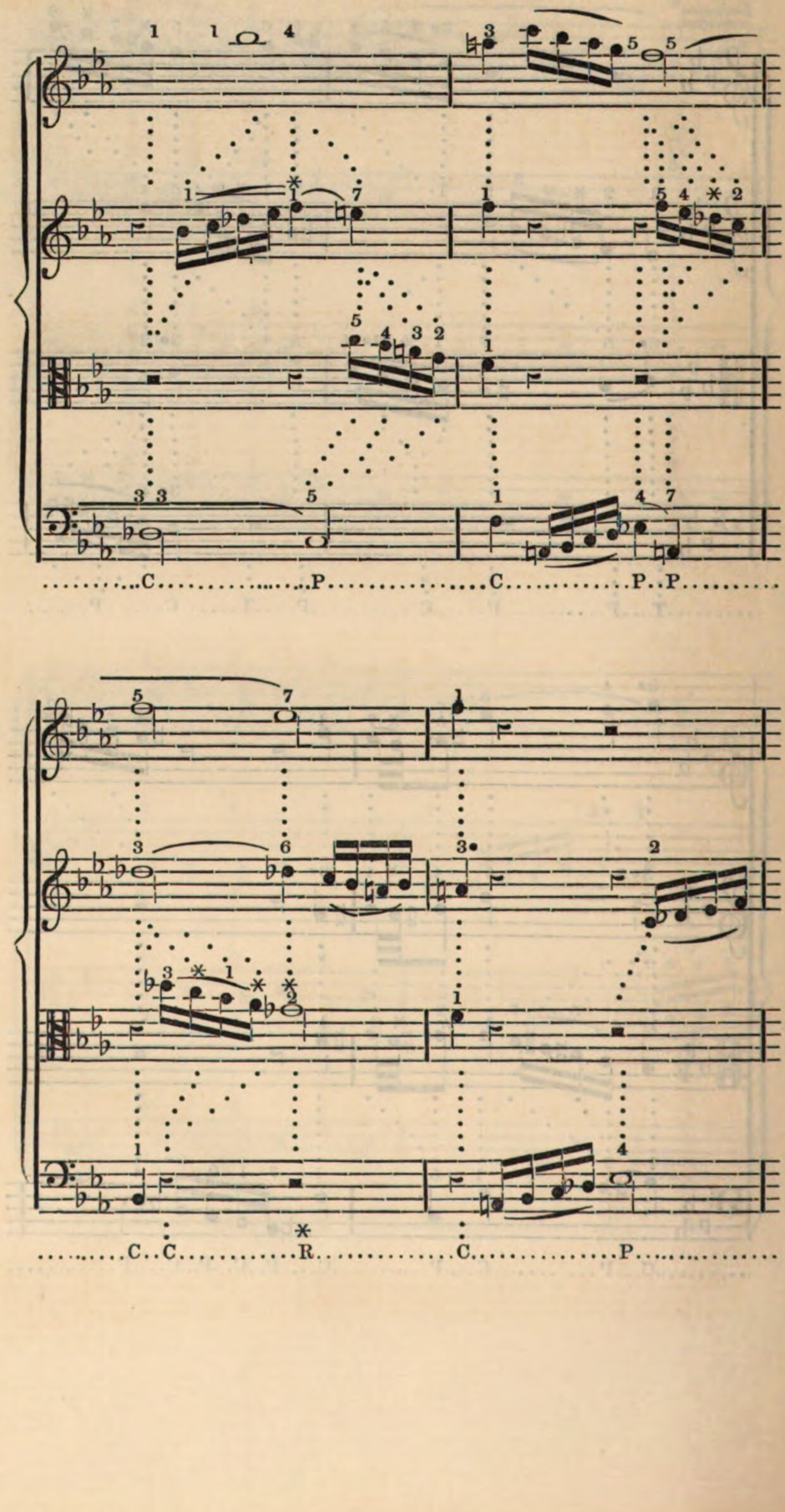

C P P* C C P C
C P C P C


P
C
P
R
P
C
T
C
R


5 4 5
* 1 3 5
3 2 3•
5
3 7 3•
1
1 5 1
3
C P C C

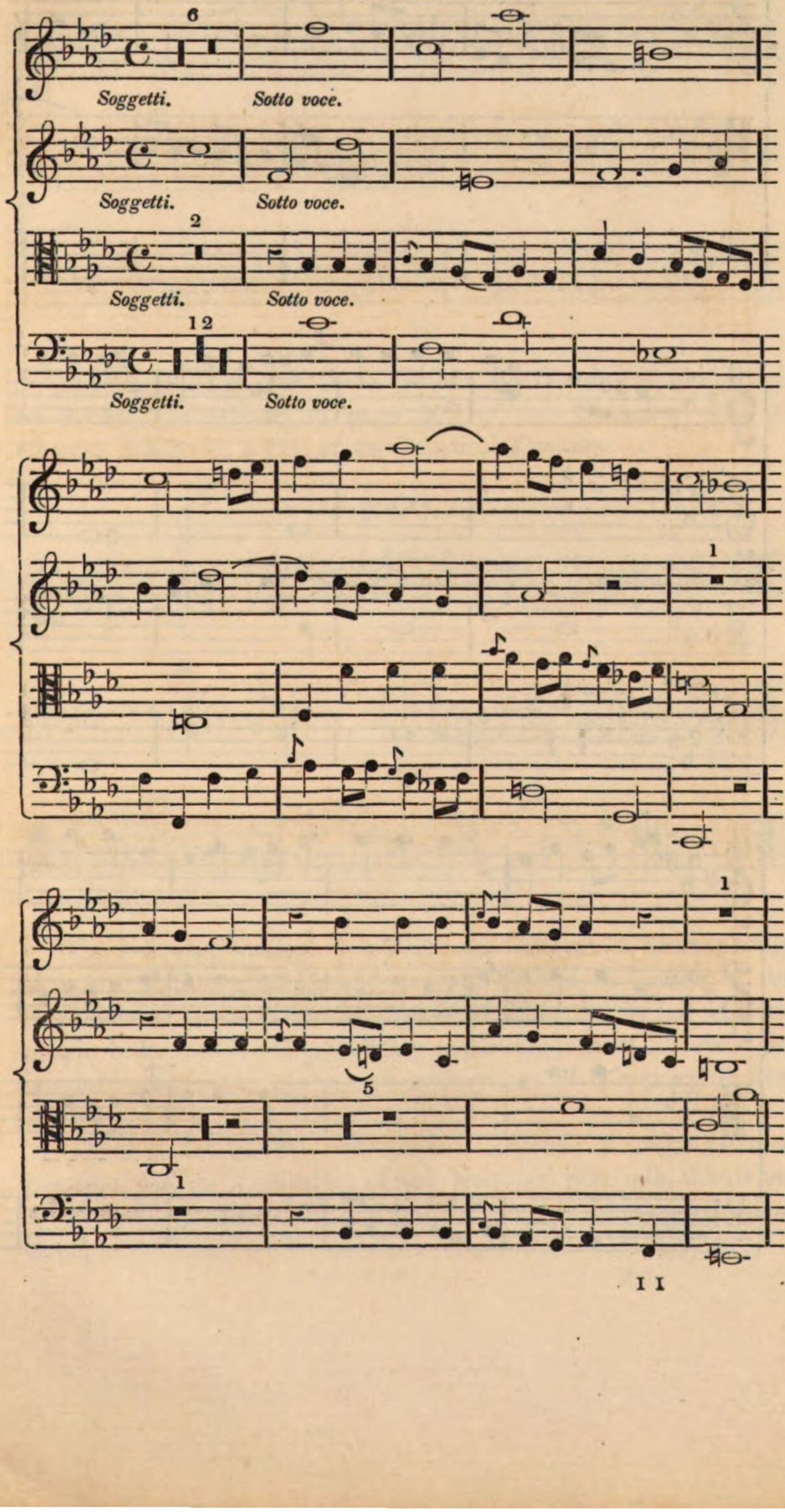

1 7 1
5 4 3 1 3• 2
3• 2 1 1 2 * 4 5
5 5 1
C P C C C P

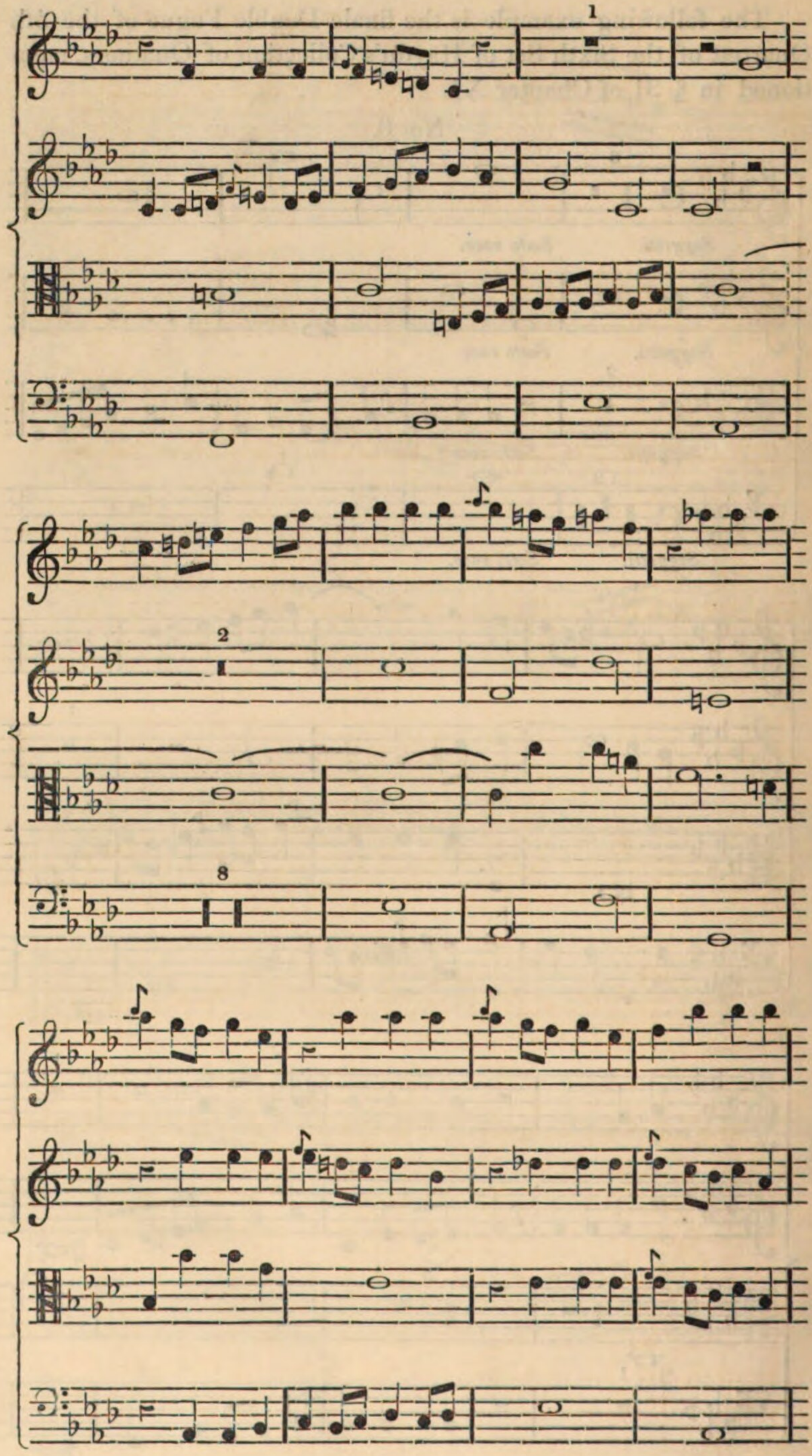

T P P C P T C P
C P C P C P

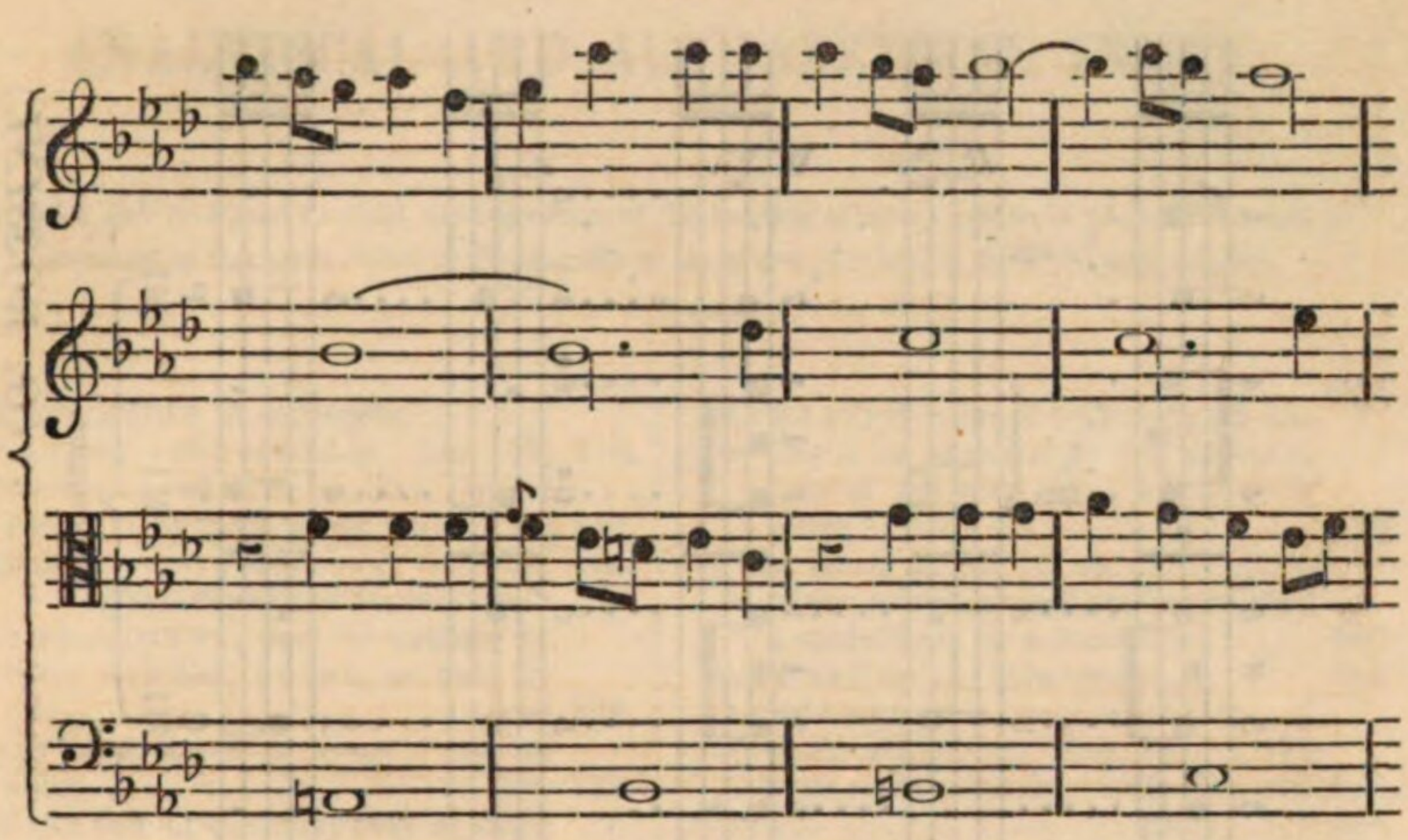

C P C P P
C C R C P

The following example is the finale Double Fugue of the 5th Quartett of the Sixth Set of Haydn's Collection of Quatuors, mentioned in § 31 of Chapter XI.

No. 6.

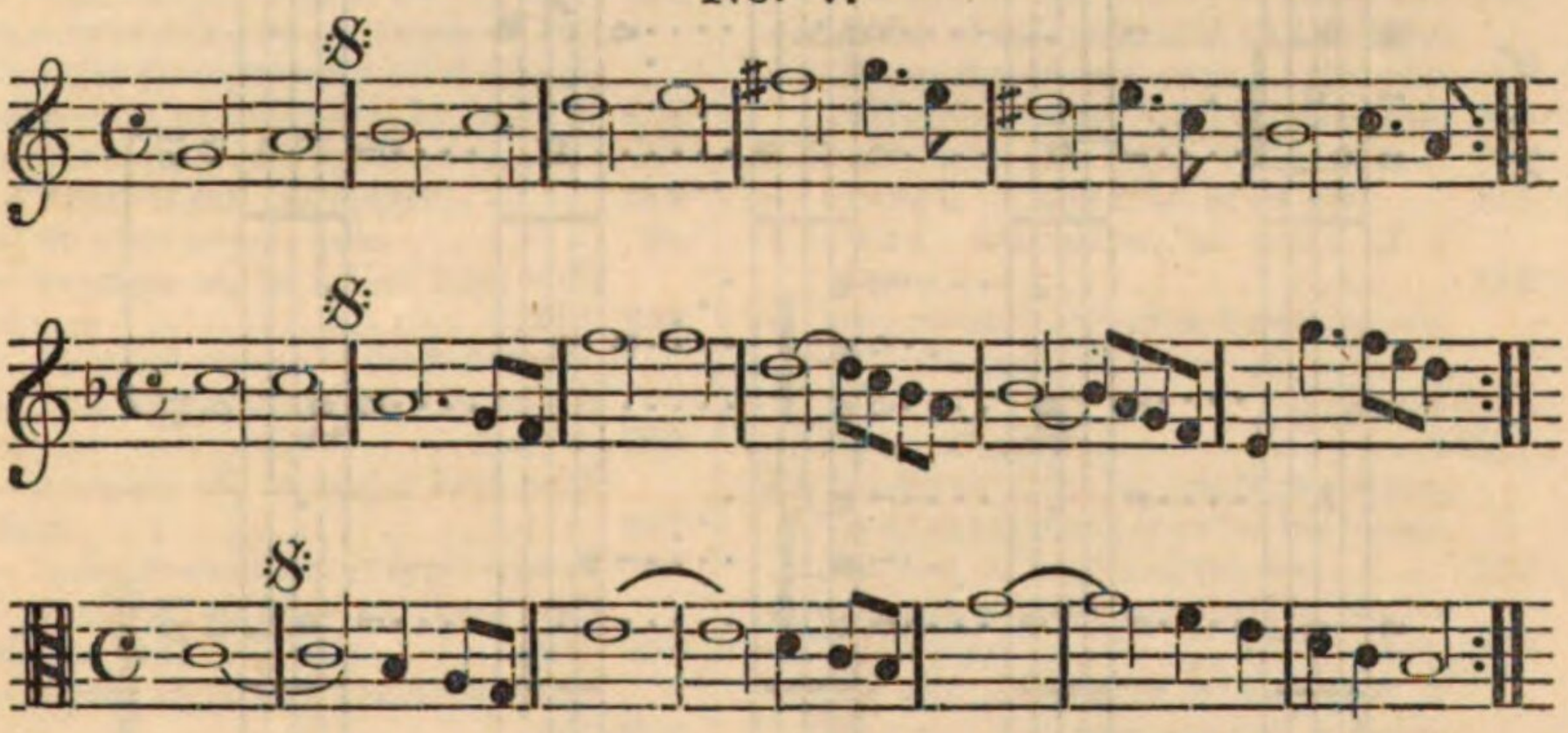



1
2
8



The following are the three Canons for two voices, composed by Richter, mentioned in page 302 of this Grammar, and in Chapter XXXIII, § 117, of the Practical Treatise.

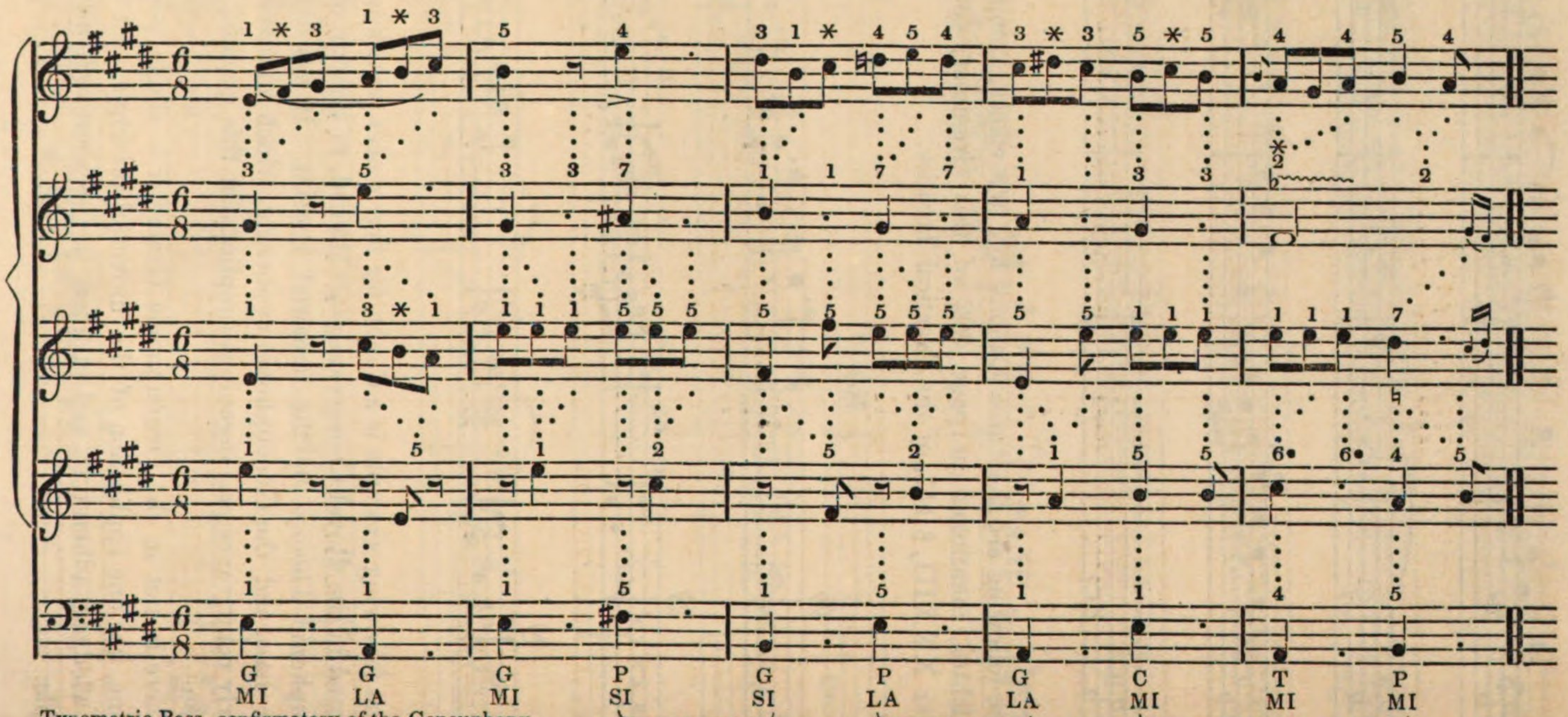
No. 7.



The following example is a Canon for four voices, extemporally composed in the Royal Conservatory of Madrid, in honour of the Geneuphonic Theory, by the immortal Rossini. It has a typometric bass, and the Geneuphonic cyphering, which unravels the masterly contrivance and ingenious simplicity of this graceful composition.

There is not in the Geneuphonic Grammar a single point of doctrine, nor one application of the universal principle, that is not acknowledged, adhered to, and justified, in this short and precious example.

No. 8.



Typometric Bass, confirmatory of the Geneuphony.

Typometer.

(*G. ROSSINI.*)

ANALYTICAL AND ALPHABETICAL INDEX.

☞ The dash (—) used to avoid the repetition of the heading of every article, is to be understood as representing that word either in the singular or the plural number, as the sense may require.

PAGE

ABBREVIATION of arpeggios..... 7
ACCIDENTS, value of double..105, 108, 116
— conversion effected by those which raise and by those which lower.121, 122
— birth of..... 145
(See *Alterative Signs.*)
ACCOMPANIMENT, may be written by three melodies, by two, or only by one..... 128
— may be made with graces and passing notes.....128, 129
— of any note of a melody may be made with a chord belonging to another scale than the established one..... 129
ACUTENESS, what it is.....§ 12, 74
ADVERSATIVE, Anti-theme, or Counter-motive, of a fugue..... 316
— example and management of the... 316
— in double fugues..... 334
ADVICE to musical students.....196, 281
— to young composers.....397, 399
— as to the composition of melody.245, 246
ALBRECHTSBERGER, example of modulation through intermediate chords of useless amplification, by..... 412
ALTERATION, precadencial.....248–254
— — where it can take place..... 249
— — on what note it falls..... ib.
— — example of, in major keys with sharps 249, 250
— — essential rule as to the fall of the, in the modulations of the major mode.....*Rule* 3, 250
— — example of, in major keys with flats..... 251
— — in the two natural or typic scales. ib.
— — example of, in minor keys with sharps and with flats.....252, 253
— — drawn from the harmonic root. 260–280
— triple, of notes..... 276
— of the precadence, recapitulation of the..... 277
— of the transcadence..... 278, 279
— the doctrine of, is useless—often absurd..... 384
— with which the transcadence of one key may become the complete precadence of the cadence, which the addition of note 4 renders the complete precadence of its own typometer.. 435
— of the harmonic root, thrilling effect produced by some.. ....272, 274, 429
— required by any precadence, that it should become the precadence of the cadence which forms the transcadence of its own typometer..... 435
— novel definition of..... 449

PAGE

ALTERATION cannot be introduced unless it be preceded by the articulation of the very chord which it is going to alter..... 449
— the least, of one of the seven notes of the reigning scale produces either a modulation or a transition..... 449
— soft and violent enharmonic..... 454
ALTERNATENESS, necessity of the, of weak and strong time, viz. of the arsis and the thesis...162, 163, 437–440
ALTO..... 464
AMPHIBOPHONY, what it is....§ 13, 74
ANALOGY of scales or gamuts..... 436
— the whole Chapter III of the first treatise.....96–103
— but not identity between dissonance and cacophony..... 449
ANALYSIS of Paesiello's cavatina, *Nel cor più non mi sento*.....123–142
— of a quartet by Mr. Catel.....283–286
— of a minuet and trio by Haydn..287–298
— of the chord presented as universal by most theorists, even in the most valuable works.....444, 445, 446
ANDAMENTO of a fugue, what is the.. 310
— example of, and rules of its use..... 311
ANSWER, *consequent*, or *reply* of a fugue..... 310
— proportional elevation between, and the proposal or intent of a fugue. 315, 321–330
— royal, or reply..... 317
ANTECEDENT, the, or *guide* of a fugue, is what is generally called the *theme*, *subject*, or *motive* of the same..... 310
— proportion of the, proposal or motive of a fugue.....312, 315
— proportional gravity or acuteness of the, and the consequent of a fugue. 315, 321, 330
— the, or motive of a royal fugue is rather to begin with the tonic..318, 319
ANTI-THEME, *Counter-motive*, or *Adversative* of a fugue..... 316
(See *Adversative.*)
APPOGIATURE..... 14
— example of..... 130
ARPEGGIO..... 7
ARSIS, or *unaccented* or weak part of time.....59, 162
— any transition must be effected at the 388
— origin of the..... 390
ARTIFICIAL, or secondary fugue..... 333
ASTERISK, or *star* (*), indicates a dissonant note, and also that a note is bereft of its proper accident...170, 181, 184, 185, 192, 193, 208, 262, 279, 286, 374

ATTACK of a fugue, what is the..... 310
— how it is to be used... ..... ib.
ATTRACTION and *repulsion* exercised by the tonic potency.....395, 451, 452
AWARD of the commission appointed to examine the *Geneuphony*, the primitive and original work of General de Virues..... 465

BAR..... 5
— double..... 13
— grand, or doubled..... 214
BARYTONE, clef of..... 2
BASS, progression of the..... 69
— preparation of the fourth in the.... ib.
— the natural, is the tonic; it may be uttered by any part.....§ 34, 76
— the movement of the, and of the other parts, depends on the choice of the inversion of the intervals.....§ 34, 77
— origin of the typometric, thorough, or tonic.....78, § 40, 99
— any of the four melodies may be articulated by the..... 127
— typometric, thorough, or tonic, inherent to the three chords of the typometer of every key, origin or derivation of the.....354, 361
— called *melodic* by several authors, explanation of the..... 376
— the typometric is often the same as the fundamental..... 416
— nature, character, and signs of recognition of the typometric or thorough, and of the fundamental, completely investigated, and clearly determined and defined.....416–420
— the typometric, does not exist in any key until that key be sufficiently established..... 419
— the typometric, or thorough, or tonic, can never be but notes 1, 4, and 5, in every key.....419, 420
— fundamental, definition of..... 420
BEAT..... 15
BELL, the Chinese..... 464
BIND..... 13
BUCKSEN, or serpent, its use..... 463

CACOPHONY, what it is.....§ 19, 75
— difference between, and dissonance.. 445
— analogy between dissonance and.... 449
— resolution of 457
CADENCE, according to the ancient theories still in use..... 65
— final, absolute, or magistral.....65, 135
— plagal.....66, 135
— on the dominant of semi-cadence.... 66
— imperfect..... 66
— broken.....66, 135
— avoided, by consonance and by dissonance..... 66
— deceptive or avoided....67, 68, 135, 359
— how it is interrupted.....67, 68, 135
— according to the Geneuphonic theory. § 4, 73
— why every stir of the melody is a.§ 33, 76
— *when it is absolute or final*....§ 44, 78
CADENCE, no sound can be added to the, except the octaves of its own notes. § 53, 80
— harmonic march by avoided.§ 72, 88, 389
— every, is the incomplete precadence of the scale built on its note 4..§ 72, 88
— *composition of the*.....96, 120
— every, is an incomplete precadence. 134, 142, 359
— the transcadence of a key is the, of another key four degrees higher than the first.....142, 371
— destruction of the..... 146
— the addition of a third to the, destroys it.....146, 147
— the natural order should be preserved in the final..... 194
— *every, is the incomplete precadence of the key built on its note* 4..... 206
— *avoided, is changed by the addition of note* 2 *into a complete precadence*.. 207
— *transformation of precadences into, in an harmonic march, fifth observation*..... 211
— *influence of the march of the intermediate parts on the choice of the, and its inversions, 4th observation*. 215
— belongs to the thesis..... 246
— is the only modic chord..... 248
— a curious fact drawn from the minor, and the precadence..... 275
— the perfect chord implicitly called, by the old school.....359, 360
— are the incomplete precadences of keys four degrees higher, completed by the understood conjunction of the tonic of those cadences with the fourth of those keys..... 371
— why of the two really contained in the typometer the first is more powerful than the second..... 371
— analysis of the.....377, 379
— the fall from a chord to another hitherto called, generally takes place between two chords belonging to different keys..... 383
— cause of the sufficiency of the two chords called precadence and..385, 386
— how, discharge the office of precadences.....416, 417
— of the minor mode cannot be constituted an avoided cadence..... 422
— why the transcadence may be placed before the..... 434
— is the only chord giving at once the three consecutive elements of music, viz. key, mode, and rhythm..... 436
— why it is more accented than the transcadence.....437, 438
— a piece of music may begin with the, or the precadence, but never with the transcadence..... 440
— difference felt by the ear between an altered, and a pure precadence.... 449
— and precadences, all music proceeds through a successive alternation of. 457
CADENZA..... 16
— theory of the shake and the. 440, 441, 442

CADENZA, definition of the..... 441
— is subject to all the rules of a correct harmonization..... ib.
— with the, the dissonance relates to both precadence and cadence..... 442
CANON, rules of this composition..301, 304
— is equal to a royal fugue, tied..... 317
— the typometer as a, for four voices, with the addition of the typometric bass for a fifth voice or instrument. 363
— the typometer is the mould of all, whatever..... 364
— successive entrance of each voice in a ib.
— necessary syncope in a..... ib.
CANTO, plano or fermo, *7th observation*. 209
— may be changed into Geneuphonic or regular music by the addition of the accidents belonging to the various precadences..... 209
CANTO FERMO, or *motive*..... 167
CAPPELLA, music à, or *facistol*, *7th observation*..... 209
— old fugues written in music à..... 340
CARNICER'S counterpoint from one note against one to one note against sixteen is presented under No. 2 of the examples contained in Chapter XV. 469
— quartet is presented under No. 3 of the same chapter, as a perfect model of flourished counterpoint..... ib.
CATEL, a quartet by, analysed..283–286
— radical formula of strong or abrupt modulation..... 137
— theory of chords..... 444
— theory of inversions, and according to principal authors..... 446
— use and management of the second of the minor mode, without preparation..... 447
CAVATINA, harmonization of Paesiello's 123–132
— analysis of its structure..... 280
— the first mediation of the same, presenting a model of flourishing melodies; firstly, with notes intrinsic of the bar; secondly, with ornamental notes and graces foreign to the measure.....398, 399
CHANT, plain.....4, 209
CHARACTERS, the three musical..162, 163
— are constitutive of or inherent to every piece of music..... 347
— are *tonism*, or the key; *modism*, or the *mode*; and *rhythm*, or the proportional value of the notes divided into equal measures.....334, 350
— why the three precadences unite them to their own transcadencial...393, 395
— how may be operated the fusion of chromatism and enharmonism with the tonic, the modic, and rhythmic characters, which are contained in the diatonic genus only..... 429
CHORD, perfect or common.....27, 53
— the perfect, contains the indication of both key and mode..... 52
— definition of..... 53
— their division..... ib.
CHORD, various kinds of dissonant... 55
— diminished..... 57
— extreme sharp..... 58
— how to distinguish a consonant from a dissonant..... ib.
— aptness of each sound to receive the perfect..... 64
(See *Polytonogamism*.)
— rule for using a succession or march of perfect..... 64
— mode of uniting..... 65
— connexion of..... 68
— all, are polytonic.....§ 28, 76
— their endless variety of denominations and differences attributed to them in all the existing theories, and most of their rules, are useless, erroneous, and prejudicial.....§ 45, 78, 149
— consonance of the, composed of minor thirds and of those termed of an alternity of both major and minor third reciprocally.....§ 72, 87
— general rules of connection or affinity between..... 143
— secondary, or accessory precepts with regard to the connection of the.... 143
— there are in music only two really distinct..... 205
— the last but one must always be the neutral precadence..214, 220, 269, 274, 374
— the variety of its names does not prevent it being the same.....214, 220
— theory of..... 247
— of the seventh on the sensible..... 274
— dissonant, why a dissonant.....349, 350
— polytonism of..... 354
— when and why a dissonant, is euphonic 357, 358
— the ancient but still admitted theories give implicitly the name of cadence to the perfect..... 359
— every dissonant is precadencial..... 360
— belongs to the key in which the second in it forms the key-note.. 4, 5
— explanation of many, supposed, in ancient theories, to be different.... 379
— diminished fifth and sensible sixth. 380, 381
— of the tritone with the minor third.. 386
— cause of the sufficiency of the two, called precadence and cadence.385, 386
— of the third, fifth, and sixth, upon the subdominant..... 414
— theoretical controversy about the same definitively settled..414, 415, 416, 417, 418, 419, 420
— acknowledgment of two principal... 425
— any whatever may be easily found out, analysed, and exactly determined, by means of the combination of the gamut cyphering with the syllabic nomenclature of every scale.. 274, 418, 419, 448
— the cadence is the only one giving at the same time the three consecutive elements of music; viz. key, mode, and rhythm..... 436

CHORD of the fourth and sixth..... 436
— analysis of one, supposed by the ancient and existing theories to be the sole and universal in harmony..... 444
— theory of, according to Mr. Catel.444, 446
— of the seventh on the sensible, or false precadence, use of..... 447
— superfluous nomenclatures of all altered..... 449
CHORUS, what it is..... 93
CHROMATIC (see *Sign) genus*, does not exist.....§ 62, 84
(See *Progression.*)
CHURCH or *Facistol* music..... 209
(See *Facistol* and *Cappella.*)
— music compositions, as all others, are governed by the universal principle of the successive alternation of only two chords; viz. precadence and cadence..... 455
CLARINET..... 462
CLARION, or shrill trumpet..... 462
— keyed..... 462
— use of the..... 462
CLEFS, or CLIFFS, why invented..... 2
— number and names of..... 2
— fundamental..... 2
— relation between the.....3, 4
— ancient of Sol..... 4
CODA, of the andamento in fugues..... 311
— of the subject and use of.....312, 313
COLLECTION of models for the imitation of pupils..... 468
COMMAS..... 21
COMPARISON between dissonance and an anormal state in any thing..356, 357
COMPARISONS, special confirmatory .. 444
CONCORD..... 27
— imperfect or neuter..... 28
— definition of..... 53
(See *Consonances.*)
COMPOSERS and Professors are respectfully requested to inform the author of any case, the origin and explanation of which should not be found in the *Practical Treatise*..... 279
COMPOSITION of music, what it is..... 91
— simple and multiple..... 92
— theory and rules of musical..... 245
CONJUNCTION of notes 4 and 5, power of..... 87, 206, 248–254
— minor third is the only consonant... 377
CONSEQUENCE is another name for fugue 309
CONSEQUENT, the, of a fugue is the *answer* or *reply* to its antecedent proposal or subject..... 310
(See *Answer.*)
CONSONANCES..... 27
— division of..... 28
— what they are..... 53
— resolution of..... 61
— not to be used by direct motion, a succession of perfect..... 62
— mutual progression of..... 63
— none is imperfect.....§ 11, 74
— — indivisible and unalterable, can be neither superfluous nor diminished and imperfect.....§ 60, 83
CONSONANCE, origin or principle of dissonance.....354, 361
— dissonance is always the interval of second with one of the notes of.... 391
— is generated by dissonance..... 446
— generation of..... 451
CONTENTS..... vii
CONTRADICTION, curious, refuted..444–448
CONTRARY-INVERTED is the name of two scales used by ancient composers to write the proposal and the answer of fugues by contrary motion. 338, 339
— scales, new combination, enabling to regulate the use of the..... 340
CONVERSION of one interval into another..... 371
COUNTER BASS..... 464
COUNTERMOTIVE of a counterpoint.. 167
— Anti-theme, or Adversative, of a fugue 316
COUNTERPOINT, definition of..... 142
— of treble and bass..... 154
— of treble, counter-tenor, and bass... 157
— complete, in four parts..... 160
— of two notes against one..163, 164, 165, 169
— of four notes to one.....169, 173
— syncopated..... 176
— mechanism of, completely explained. 180–196
— fifth species of.....190, 198, 199
— flourished, florid, or unlimited..... 211
— definition of..... 212
— example of..... 213
— double at the octave..... 216
— — example of..218, 222, 224, 226, 228
— double at the octave by contrary motion..... 230
— — with the third above the motive.. 231
— — — above the counter motive... 231
— — — converted into a quartett.. 231, 232, 233
— at the 10th and the 12th, and quadruple, at the octave..... 234
— inversion of the same..... 236
— at the 12th above..... 237
— triple and quadruple, at the octave.. 237, 238, 239, 241
— inversions of the triple and quadruple, at the octave..... 243
— names of the various kinds of..... 243
— table of inversions of the triple and the quadruple, at the octave..... 243
COUNTER-TENOR or CONTRALTO clef 2
— clef proper to the.....2, 195
CREATION of musical works..... 91
CRESCENDO..... 14
CROSSING of parts, in fugues, applicable to all other counterpoints.....345, 346
— the, of parts is, if not a defect, at least an irregularity, but often to be tolerated.....345, 346
CYMBALS, the..... 464
CYPHERING, of all gamuts, table of the. 95
— Geneuphonic, of a quartett by Catel, and of a minuet and trio by Haydn. 283, 287
— — analysis of.....284, 296

CYPHERING, the gamical; combined with the syllabic nomenclature, is the key that opens all the secrets of music. 418, 419
— — suffices to determine every chord. 274, 418, 419, 448
DEGREES..... 20
— numerical order of the..... 20
— conjunct and disjunct..... 21
— or tones and semitones. It is useless, in harmonic calculation, to take notice of the inequality arising from their division into the same number of parts.... .....§ 45, 85
DESTRUCTION of a key, and *reproduction* of another. 205
— *second observation*, and third observation..... 206
DIATONIC progression or genus, 21, 84, 348
DIMINUENDO. 14
DIRECT..... 13
DISCORD. 27
— definition of... 53
(See *Dissonances.*)
DISSONANCES.... 97
— what they are. 53
— division of..... 55
— natural and artificial. 61
— use and collocation of.. 61
— is the harmonic generator.. .. § 46, 79
— is euphonic.... .. ..§ 47, 79
— the only, is the interval of the second § 48, 79
— but not cacophony, generated by every interval greater or less than a minor third. .....§ 72, 87
— resolution of a. 179
— theory of.... 196
— amplification of. 203
— how prepared. 217
— how resolved..... 217
— production of. 255
— and Consonance, principle or origin of..... .....354, 361
— may be compared to an anormal state in any respect, and Cacophony to any disorder.....356, 357
— produced in the arsis of a measnre or bar by passing notes, is always relative to the tonic or typometric bass of that measure. 376, 377
— is the first of musical elements..390, 391
— is always a second with respect to one of the consonant notes. 391
— fundamental rule for the resolution of..... .....391, 392
— examples of, prepared, percussed, and resolved, translated from usual letters (as they appear from p. 199 to 202) into musical writing.... 410, 411
— a novel definition of..... 421
— relates, with *passing notes*, to the cadence; with the *shake*, to the precadence; with the *cadenza*, to both 442
— is the generator of consonance . 446, 451
— and Cacophony, analogy between .. 449
— double and triple, explanation and resolution of. 457
DISSONANT, what note in counterpoint is so called.... 196
DIVISION of musical pieces..... 280
DO. Substitution of this syllable for the name UT, of the note C of the Greeks. 1
— tonic of the scale of nature, and type of the major mode..... 42
DOMINANT or *fifth*.... 23
— the note 3 of every scale is the true, on account of its importance and frequency in any melody, § 3, p. 73, 224, 401-405
— the three.. 401
— a new definition of the word..... 403
— the note 4 of every scale is truly the rhythmical..... 403
— the note 7 is really the tonic, of every gamut.. 403
— the precadencial character is inherent to..... 404
— the modic, of the minor mode, is note 2 natural; and the note 2 raised a semitone is the modic dominant of the major mode.. 404
— proposal of the author with regard to the establishment of three, instead of one.... 405
— what the two, of the ancients were.. 425
— which note should be acknowledged as, if there were to be only one.... 425
— the two tonic, of the major mode become modic in the minor.. 426
DOT and double Dot..... 6
DOUBLE or two-themed Fugue. ..333, 335
DUET, what it is.... 93
DRUM, the rolling..... 464

ECLIPSE, a musical, is metaphorically the collision or clashing of two sounds belonging to different keys. 350
ENHARMONIC *Progression*, the, is not a musical genus..... § 62, 84
— equivalence of 453, 454
EPILOGUE, in fugues.....332, 343
— formality to be attended to before beginning the..... 344
— definition of the..... 344
EQUIVALENCE, enharmonic, 108, 109, 110, 453, 454
ESSAYS, the, composed by pupils, must be immediately performed by four of them. 169
ETEROGAMIC, meaning of this ajective § 16, 75
ETEROTONIC, signification of.. § 16, 75
EULER, vain efforts of, to ascertain the causes of the agreeableness or unpleasantness of intervals..... 355
EUPHONY, what it is. .. ..§ 19, 75
— its principle..... .....§ 27, 76
EXAMINATION, self-, improvement, and comprobation 281
EXCHANGE of parts..... 173
EXPERIMENTS, made with respect to the analysis of one of the musical compositions generally considered as most complicated.. .. .. ..433, 434

FACISTOL or church music, *7th observation*..... 209
— music, transformation of, into regular or classical music, by means of the addition of the proper alterative signs 209
— — ancient fugues in..... 340
— — why the sharp is usually supplied at the 7th, in the keys with sharps.. 423
FAGOTTO or BASSOON, its use..... 463
FANCY, *flourished*, or ornamental fugue 333
FA-UT-FA, the nick-name of, which is the mere indication of the alternateness of precadence and cadence, cannot be but the expression of correctness in musical composition, though *Fa-ut-fa music* is improperly used as an ironical phrase..... 388
FERMATA or *organ point*..... 14
FIFTH, or dominant..... 23
— nature of the, according to the ancient theories still in use..... 28
— the, of the tonic of a minor scale, is third of the tonic of its relative major. 51
— the, of the tonic of a major key is seventh of its relative minor, which is altered by a semitone..... 52
— faults of..... 62, 151-154
— concealed..... 62, 151-162
— importance of.....§ 3, 73
— is no consonance.....§ 16, 74
— what is by several authors called diminished.....§ 40, 83
— the pleasantness of, as extreme note of an harmonic triad, is borrowed, § 61, 83. 84
— example of, well given and badly given..... 153
— bad, when permitted..... 161
— considered in its capacity of dominant.....431, 404
— is essentially pretonic or precadencial 402
— its harmonic strength is not so great as that of the third..... 423
FIGURE, the rules drawn with regard to the combinations possible between the seven, are all the rules possible in music..... §§ 7 and 8, 74
FLAGEOLET, utters the highest notes of the orchestra..... 462
FLAT..... 11
— progressive order of the..... 11
— fixed or essential..... 12
— intermediate or accidental..... 12
— double..... 12
— when more than one, are at the clef, the penultimate is the major tonic, and the sixth of that penultimate flat is the name of the last flat which is to be at the clef, to have the minor mode of the major tonic alluded to.. 47
(See *Alterative Signs*.)
FLOURISHED, *florid*, or *unlimited* counterpoint..... 211
— or ornamental fugue..... 333
— how a melody ought to be, either with notes making an intrinsic part of the bar, or with ornamental notes or graces not reckoned in the measure, 398, 399
FLUTE..... 462
FLUTE, small, its diapason..... 462
FOURTH, or subdominant..... 23
— mixed nature of the, according to the ancient theories still in use..... 27
— rule for using a succession of.... 62, 217
— and sixth, chord of..... 434
FUGUE, treatise on the.....300-346
— definition of..... 300
— excellence of that kind of musical composition..... 301
— owes its origin to the popular composition called *Canon*..... 301
— in two parts, example of, by Morigi 303
— its analysis.....304-305
— practical rules of the..... 304
— double, in four parts, example of, by Haydn.....305-308
— practical rules for making..... 304
— general rules for the different kinds of 309
— proportional degree of acuteness and gravity between the antecedent or proposal and the consequent or answer.....315, 321, 330
— choice of the key in which it ought to be written..... 315
— names of the various kinds of..... 317
— royal, tied..... 317
— — free or untied.....317, 318
— — with what note the proposal or theme should rather begin.....318, 319
— within the key..... 321
— — — how it can be converted into a royal fugue.....322, 323, 326
— with a false answer and out of the key, example of..... 325
— has its natural extent in a minor 7th 326
— royal, difference between it and the fugue within the key..... 326
— by imitation, tied and untied, rules for..... 331
— — replies in, necessity of a determined interval being agreed upon and made known with regard to .. 332
— ornamental or secondary..... 333
— with four subjects, is altogether abandoned..... 335
— by contrary motion..... 336
— — within the key.....336, 337
— — free or untied.....337, 338
— — errors fallen into by ancient composers of.....339, 340
— — correction of these errors..... 341
— march or conduct of..... 342
— interchange of parts in..... 343
— intermingled or intercalated melodies to fill up the harmonization in, 344, 345
— crossing of parts in..... 345
FUNDAMENTAL, difference between the, and the typometric, thorough, or tonic bass..... 416
— nature, character, and signs of recognition of both thoroughly investigated and clearly determined and defined.....416, 420

GAMUT..2, 21, 29, 30, 31, 32, 34, 35, 73

GAMUT, relative..... 117
(See *Scale* and *Key*.)
GENERATOR, the harmonic, is dissonance.....§ 46, 79
— the, of consonance is dissonance.... 451
— previous to the birth or appearance of a tonic, i. e. of a key-note, nature always exhibits the immodic conjunction of its generators..... 452
GENEUPHONY, what it is.....§ 14, 75
— relation of several facts which have preceded and followed the impression of, and the establishment of a Royal Conservatory of Music at Madrid..... 464
— theory, names of several learned theorists and eminent composers who gave their sanction to the..... 467
GENUS, the pretended chromatic and enharmonic, do not exist..... (See *Progression*.)
GRUPETTO..... 16
— how produced..... 130
GUIDE, one of the many names given to the *proposal*, *antecedent*, or *motive* of a fugue..... 309
(See *Proposal* or *Antecedent*.)
GUITAR..... 464

HARMONIC ROOT (see *Root*)..... 256
HARMONIZATION, fundamental rules of, as to the connection of chords, and faults to be avoided..... 48
— first example of..... 117
— rule for knowing with which chord we may harmonize, in the case of the repetition of notes 1, 4, or 5, which may belong both to the cadence and transcadence, or to the transcadence and precadence, or to the cadence and precadence..... 119
— notes reckoned in, or essential to.. 122
— exercise of, on Paesiello's Cavatina, *Nel cor più non mi sento* 123–141
— effected by simple and by double-triplets..... 127
— the, of any note of a melody may be made by considering that note as belonging to any other key than the reigning one..... 129
— the, of passing notes..129, 130, 374, 375
— with alterative signs, namely, with modulations applied to the second mediation of Paesiello's Cavatina. 139
— a complete exercise of.....180-196
— of the same melody, comparison between two..... 195
— the scale or gamut to which any note is considered to belong, determines whether the harmonization of that note is to be effected with the precadence, the cadence, or the transcadence.....454, 455
HARMONY, its definition..... 20
— simple and compound..... 65
— all the rules are contained in one octave.....§ 7, 74
— all, is simple.....§ 29, 76
HARMONY, matter of.....§ 31, 76
— how it proceeds.....§ 32, 76
— naturally exists in melody..... 92
— definition of..... 130
— how and why in harmony the various melodies exchange their typometric bass..... 190
— reasons for which melody cannot be derived from..... 352
— motion of the four melodies of which, is composed.....362, 369
— the complete precadences consist of four parts, namely, of four notes in each precadencial chord..... 417
— cacophonic or compound..... 457
HARP..... 464
HAUTBOY..... 462
HAYDN, a minuet and trio by Haydn analysed.....287-298
— example of double fugue, in four parts, by.....305-308
— succinct analysis of the double fuged *finale* of a quartett by.....432, 433
— the first 26 measures of that finale are under number 6, in Chapter XV 481-483
— relation of the analysis of the above-mentioned *finale*, made with the expression of the most minute particulars, both at London and Madrid 433, 434
HEPTACHORD.....§ 1, p. 2, 20, 73
— division of the sound in, and tetrachords..... 96
— explanation of the table of..... 97
— construction of the..... 97
HEPTACHORDIC, the meaning of. § 15, 75
HOMOTONIC, what it means.....§ 16, 75
HORN (English)..... 462
— use of the..... 463

IMITATION is another name for the composition called fugue..... 309
INITIATIVE in any piece of music..... 440
— the, with the precadence, is proper to melody..... 440
— the, with the cadence, is proper to harmony..... 440
INTENT, the, of a fugue is its subject, proposal, or theme.....301, 309
(See *Antecedent* and *Proposal*.)
INTERCHANGE of parts in harmony.. 450, 451
INTERVALS..... 22
— names of the..... 23
— different kinds of..... 23
— table of the.....24, 25
— inversions of..... 26
— nature of..... 26
— consonant and dissonant..... 27
— simple and double..... 28
— major and minor..... 29
— use of various.....62, 63
— rule for the melodic progression of..... 64
— correlation of.....§ 3, 73
— modic.....§ 5, 74
— immodic..... 74

INTERVAL, every, greater or less than a minor third generates dissonance, but not cacophony.....§ 72, 87
— the only dissonant, is the second.... 120
— conversion of..... 371
— how many times each one is contained in the octave..... 427
INTRODUCTION, names of the principal authors, both ancient and modern, who wrote on the science of music.. xv
— imperfection of the existing theories. xv
— Mr. *Catel's* opinion about them.... xv
— *Bacon*, *Rousseau*, *Serres*, and *D'-Alembert's* judgment on the state of the musical science at the epoch of their life-time..... xvi
— opinion of the commission appointed by the National French Conservatory of Music, to select a classical work for the teaching of harmony and counterpoint in that establishment..... xvi
— quotations from *Kalkbrenner*, *De Momigny*, *Dr. Busby*, *Castilblaze*, and *Schneider's* works on the Deficiencies and Contradictions which prove the necessity of a radical reform in the general theory of music. xvii
— *Engelback*, *Albrechtsberger*, and *Logier's* opinion on the same subject..xviii
— interesting quotations from *Weber's* preface to his *Theory of Musical Composition*.....xviii, xix, xx
— remarkable avowals made by the classical harmonist, *Reicha*, in his *Course of Musical Composition*.... xxi
— the author's opinion as to *Weber* and *Reicha's* Treatises.....xxi, xxii
— principal and fundamental topics unknown to, and consequently not mentioned by, Weber and Reicha; their superiority over all their predecessors, and their immense simplification brought by the Geneuphonic discovery in all the questions and matters the most improved by them..... xxii
— solution of the problem, vainly sought for by them all..... xxii
— a short notice of the late General *J. J. de Virues y Spinola*..... xxii
— several curious and conclusive extracts from the Preliminary Discourse, prefixed by General de Virues to the Treatise in which he exposed his discovery.....xxii-xxiv
— all the known laws in music reduced to a sole principle given by nature herself: hence a universal system, admitting of no contradictions, exceptions, or licences..... xxiv
— cause of the voluminousness and complication of all the theories hitherto published, of all the systems invented to this day..... xxiv
— defence of innovations; systems of dissonance and the fundamental bass.xxv
— simple and compound harmony.....xxv
INTRODUCTION, suppressions to be made in the science and study of music..... xxv
— effects of Polytonogamism.....xxv, xxvi
— plan followed to prove the infallibility of the Geneuphonic Theory.....xxvi
— wonderful shortening of the time hitherto devoted to acquire a complete knowledge of musical composition.....xxvi
— why the author has written Rudiments of Elementary Music, and placed them at the head of the present Geneuphonic Grammar..... xxvi
— request made by General de Virues, both to the masters and pupils of the Royal Conservatory at Madrid....xxvii
— the author's promise.....xxvii
— indication of the various parts of this work with which the discoverer of the Geneuphonic Theory and the author of the Geneuphonic Grammar have contributed to its composition. xxvii-xxix
— advice to the reader.....xxviii
— information relative to the request contained at page 279.....xxviii
INVENTION of melody.....245, 246
INVERSIONS..... 26
— of the perfect chord..... 54
— nature of the inversions of the chord seventh and ninth..... 59
— choice of the.....§ 35, 76
— their effect in harmony..... 122
— theory and examples of the inversions of the typometric formula, or interchange of its parts, in the act of effecting a transition.....364, 368
— examination of the theory of..... 446
— all their nomenclatures are useless.. 449
IRREGULAR or ornamental fugue.... 333

KETTLE DRUM..... 463
KEY, the..... 24
— the 24 real..... 36
— the 42 anomalous..... 36
— division into natural and altered.... 37
— rules for the formation of 40
— how it is entered into a..... 41
— observations on the rejected..41, 104, 105, 108, 116, 258
— the rejected, are the basis of the enharmonic genus.....41, 42
— each, in the major, has 3 sharps more or 3 flats less than in the minor.... 42
— rules for passing from a major to a minor key reciprocally 43
— relative..... 45
— list of..... 46
— not used, or seldom so..... 47
— how to distinguish a major from its relative minor.....50, 51, 52
— at what distance from the beginning of a piece of music its key is to be determined..... 52
— how to know in what key a piece of music is written..... 52
— the minor, found in the major mode.. 55

KEY, the introduction of an accident changes the..... 67
— definition of. .....§ 1, 73
— the, and the mode are indifferent in harmonic calculation.....§ 9, 74
— any interruption of the typometric order alters the..... § 43, 78
— supposed to be relative: a gross error refuted with regard to.....§ 68, 85
— number of..... 94
— the major and the minor, whence they take their respective names... 112
— relation of, between mode and mode 113
— how a major, with sharps becomes minor, and vice versâ..... 115
— how a minor, with flats becomes major, and reciprocally..... 115
— with double accidents 105, 108, 116
— unprepared or relative.....117, 455
— a chord of a, which is not the reigning one, may be taken to accompany any note of the melody, by changing only its numbers..... 129
— why the transcadence and the precadence, which really are the cadences, the former of the scale built on the note 4, the latter of the scale built on the note 5, do not cease to belong to the reigning..... 144
— how 21, may be contained within only 12 semitones..... 145
— how the 15, marked in the typometric table are really no more than 12. 36, 146
— birth of a new.....87, 206
— direct manner of passing from one, to another..... 269
— its application from the, of *Do* to that of *Si* through a destruction of the harmonic root.....270, 271
— necessity of completely establishing in fugue the, of the tonic, and the key built on its fifth..... 343
— errors arising from the multiplicity of really distinct, and the modulation of the scale having not been acknowledged as fundamental principles... 388
— no typometric bass exists in any, until that key be sufficiently established. 419
KEY-NOTE, or tonic..... 20
(See the word *Tonic.*)
KROMER'S Quartet, mentioned at pages 397 and 398, is the example No. 5, of Chapter XV..... 473-480

LA is the tonic of the scale given by nature as type of the minor mode.... 42
LEADING NOTE, or *sensible*, or *seventh* 23
(See *Seventh.*)
LEDGER LINES..... 1
LIGATURE.....13, 176
(See *Syncope.*)

MARCH, example of an harmonic, by incomplete precadences; namely, by avoided cadences.§ 72, p.88, 204, 207, 389, *fourth observation*..... 210
MARCH, transformation of precadences into cadences in an harmonic..... 211
— of melody, law of nature in the..... 435
MARTINI'S, (Father), ingeniousness .. 154
MEASURE.....5, 9
— in general use, table of..... 10
— strong and weak time of the....162, 163
— binary and trinary..... ib.
— the trinary, is the primitive rhythm of music.....387, 498
— the binary, is artificial, instead of being primitive..... 438
MECHANISM of melody.....395, 396
— management and, of cacophonic or compound harmony, in which the resolution of multiple dissonance is fully explained.....457–461
MEDIANT, or *third*.....23, 401
MELODY, its natural extent..... 2
— its definition 20, 246
— how it proceeds.....§ 32, 76
— the, does not proceed from the bass, but dictates it.....§ 34, 76
— every, proceeds by absolute cadences, and must be accompanied by three groups of the typometer.....§ 42, 78
— any note of a melody may be accompanied with the notes of another key which are consonant with it. § 69, 86
— how many, really exist in harmony. 92
— it is simple..... 93
— names of the four..... 122
— every note in a melody belongs to one of the two chords into which are distributed the seven notes of the scale in which that melody is composed..... 122
— the principal, or singing part, or motive, is in harmony the only part that is free..... 190
— is the alternate succession of precadences and cadences.189–196, 204, 214
— advice as to the composition of..245, 246
— intercalated or intermingled, to fill up the harmonization in fugues.343, 345
— why, cannot be derived from harmony..... 352
— motion of the four, of which harmony is composed.....362, 369
— mechanism of.....395, 396
— the transcadence is not indispensable to the construction of..... 392
— how the typometric, proceeds by emitted cadences and incomplete precadences..... 417
— law of nature as to the march of.... 435
— when a melody, to pass from a chord to another, effects a skip greater than is indicated in the typometric formula, that melody is about to change its place or position with another..... 450
— different manners in which the sounds or notes of any melody can proceed. 454
MINUET and Trio by Haydn, Geneuphonic cyphering and analysis of.287–298
— its division and structure..... 296

MODE, definition of the 29
— major and minor..... ib
— comparative table of the major and minor..... 30
— measure of the major and of the minor.....73, § 5, 74
— the key and the, are indifferent in harmonic calculation.....§ 9, 74
— minor, why it is minor than the major..... 112
— superior consonance of the minor... 248
— refutation of the paralogism, viz. that the scales of the minor mode have no mediant.....421, 422
— apparent reluctance of the ear to relinquish the minor..... 422
— the minor, exists of itself without having been generated by the precadencial dissonance..... 422
— refutation of the objections against the leap of minor third in the minor 423
— preeminence of pureness of, in behalf of the minor..... 426
— modulation within the, (or rather within the key).....208, 276, 455
MODIC sounds, why the sounds 3 and 6 of every gamut are the..... 113
MODISM, definition of..... 421
MODULATION..... 40
— rules for..... 40
— definition of.....§ 37, 77
— and translation, difference between. § 39, 77
— advice about.....§ 40, 78
— is always affected through a sole and simple process, and without intermedial cause.....79, § 51, 80
— the preparation to, is always the same, whether the abandoned key and the one just entered into are relative or not.....§ 67, 85
— first example of.....§ 69, 86
— principal cause or generation of. § 72, 87
— second example of.....§ 72, 88
— explanation of the mechanism of. § 72, 88, 98
— information on the choice of..... 114
— and transition, sole and universal rule of..... 135
— example of strong and abrupt..... 137
— and transition, guidance from step to step to..... 149
— within the mode is an erroneous denomination, which means modulation within the key, 6*th observation*. 208, 276, 455
— fundamental theory and rules of. §§ 97 and 98, 148–254
— and transition, direct way to..... 269
— which are the two ways of modulating towards the fifth of the reigning key..... 318
— how to effect it in fugues after the interchange of the proposal or antecedent..... 343
— the only medium or channel to modulation and transition is the alteration of the minor third..... 356

MODULATION, errors arising from the multiplicity of really distinct keys, and the modulation of the scale not having been acknowledged as fundamental principles..... 388
— abuse of penetrating.....271, 397
— and transition, retrospection to the rules of; where will be found all the examples necessary to complete the most extensive information on this subject.....411–413
— table of all, and transitions from any chosen key to any other that may be sought for..... 413
— through intermediate chords of useless amplifications by Albrechtsberger, example of..... 412
— abuse of the penetrating, produced by one of the destructions of the harmonic root..... 428
MONOCHORD RELATION, what it is. § 17, 75
MONOSOUND, its value.....§ 18, 75
MORDENTE..... 15
— example of..... 130
MOTION.....60, 241
— theory and example of the three synphonic..... 369
— of the four melodies of which harmony is composed.....362, 369
— there is no direct, but through a succession of thirds..... 570
MOTIVE, or *canto fermo*..... 167
— what it is..... 246
— the, of a fugue is its proposal, its subject or intent.....301, 309
— proportion of the, intent or subject of a fugue.....312, 315
— proportional gravity or acuteness between the, and the reply of a fugue. 315, 321–330
— second, in double fugues..... 335
— fugue with four..... 335
MOVEMENTS..... 18
— of parts, 2*nd observation*...60, 217, 241
— initiative..... 440
MOZART, analysis of his Quartet, No. 1 of the first set of Quartets of Op. 18..... 456
— — of his Quartet, Sanctus, Sanctus, and Hosanna in excelsis, from his Requiem Mass.....456, 457
The reader will find this last Quartet at length under No. 4 of the examples contained in Chapter XV of this Treatise..... 470-472
MUSIC, ancient..... 4
— church.....4, 209
(See *Facistol* and *Cappella*.)
— has only two chords, which correspond to the arsis and to the thesis.....121, 246
— names of the different parts of a piece of..... 280
— the cadence is the only chord giving at once the three consecutive and constitutive elements of music, viz. key, mode, and rhythm..... 436

MUSIC, the system of, grounded on mathematical calculation, namely, on numeric proportion between the different sounds, is incorrect, defective, and vicious... 436
— the essential and sole basis of good music is a complete identity between all octaves whatever..... 436

NATURAL, its use..... 12
NINTH, chord of, on the dominant.... 57
NOMENCLATURE, all, of chords, whether pure, viz. straight or inverted, of modulations, transition, &c. are superfluous..... 449
NOTES, names of the.....1, 3
— origin of the names of the..... 2
— their multiple or complex denomination.....3, 94
— signification of the same.....2, 95
— different species of..... 5
— proportion or temporal value of.... 5
— increase of duration of..... 6
— what a note of a major key becomes in its relative minor..... 51
— respective importance of the,§3,73,438,439
— numbers applied to the seven..... 93
— substitution of the true note to its ridiculous representation by the doubly flattened superior, or the doubly sharpened inferior..... 109
— every, of a melody may be considered as belonging to a different scale, and harmonized as such..... 129
— a note which is uttered at more distance than one single degree is not dissonant..... 165
— commuted..... 176
— the name of a note, though that note be bereft of its proper accident, is sufficient to ascribe to it the number which its syllabic name indicates in such or another scale....205, 208, 274
— wonderful correlative affinity and power of the, 1, 4, 5, of every scale, 97, 99, 112, 114, 382
— every syllabic name of a note keeps the same number in the six different gamuts of the same syllabic denomination..... 116
— proportional importance of the notes of the scale..... 439
— the syllabic name of a note gives always the knowlegde of its number, which is fixed by the tonic of the reigning key; it suffices, therefore, to explain the nature and composition of any chord, without exception. 448
— the different manner in which the sounds or notes of any melody can proceed..... 454

OCTAVE.....§ 1, p. 20, 73
— faults of..... 62
— of conccaled..... 62
— value of each..§ 6 and 10, p. 74, 75; § 18, 146
— election of the.....§ 35, 76

OCTAVE, equal to unison..74, 95, 198, 207
— example of, well given..... 152
— — badly given.....153, 158
— when bad octaves are permitted.... 161
— equal to the unison or the denominative sound..... 158
— the four divisions of the..... 321
— harmonic identity of the..... 353
— a perfect identy between octave and octave is the sole basis of good music.....436, 437
OCTAVISM.....§ 1, 73; § 6, 74, 378
— equisonance of the..... 353
ORGAN point..... 14
ORNAMENTAL or secondary fugue.... 333
— notes and graces, caution against the abuse of..... 397

PAESIELLO'S Cavatina, harmonization of.....123–141
— — analysis of its formation and division..... 280
— manner of flourishing a melody either with notes becoming intrinsic ones in each measure, or with ornamental notes foreign to the bar, exemplified in the first mediation of Paesillo's Cavatina, *Nel cor più non mi sento.* 398, 399
PARENTHESIS (musical), what it is §72, 88
PARTS, movement of..... 185
— — second observation..... 214-215
— names of the distinct parts of a piece of music..... 280
— crossing of, in fugues, applicable to all other counterpoints..... 345
— interchange of, in harmony....450, 451
PASSAGE..... 60
(See *Passing Notes.*)
PASSING NOTES, nature of.....52, 162
— rules applicable to..... 64
— important rules on..... ....§ 70, 86
— are those of the arsis, they are necessarily harmonized.....128, 305
— may be considered as typometric or harmonic, and harmonized as such. 130
— or *glissées*, or *sdrucciolo*..... 170
— no alterative sign foreign to the key can be applied to a..... 172
— are to be at the shortest possible interval from the preceding and following..... 181
— must be consonant with each other 215, 373-376
— — third observation..... 274
— when foreign to the typometric chord, are cacophonic..... 279
— a complete example of the employment of passing notes, with their analysis.....373–377
— when harmonized, are subject to the alternation of precadences and cadences..... 374
— the dissonance produced in the unaccented part of a measure or bar by passing notes, is always relative to the tonic, thorough, or typometric bass of the said bar.....376, 377

PASSING NOTES are often consonant with the fundamental bass, resulting from the inversion of chords. ..376, 377
— why, are approved by the ear, though apparently dissonant 388
— with, the dissonance relates to the cadence..... 442
PAUSE..... 14
PEDAL, its rules, and example of it..69, 70
— in fugues, after the epilogue, use of the 345
— general manner of using the..... .. 342, 343, 396, 397
— difference between the ancient and the modern, elaborated by art..... 443
— the modern pedal is subject to the law of the alternateness of precadence and cadence..... 443
PERCUSSION is the second of the three times of a dissonance, and the only dissonant of the three..... 199
PERIOD.....8, 280, 281
PHRASE..... 8
— musical modification or incidental.. § 72, 88
— definition of the musical.....246, 280
— members of..... ib.
— analogy between..... 397
PIANOFORTE..... 462
(See the *Table of Correspondence* between voices and instruments.)
POLYTONISM, theory of..... 103
— of chords..... 354
POLYTONOGAMISM, signification of. .. § 27, p. 76 ; § 49, p. 79, 246
— theory of..... 103
— directions for the use of..... 105
— observations and rules drawn from the table of... 108
POTENCY, accordance of the sonorous with the rhythmical..... 437
PRECADENCE.....§ 4, 73
— its character.....§ 56, 81
— may be increased by two-thirds..... ib.
— is linked to the other two groups.... ib.
— is equal to the chord of the sensible on the *dominant ;* is not completely consonant; is accepted by the ear, notwithstanding its dissonance of second..... .....§ 57, 82, 197
— the character of the precadence compared with that of the two preceding chords..... ib
— every cadence is the incomplete precadence of the key grounded on the note 4 above or 5 below of its tonic. § 72, 88, 206
— composition of the..... .....96, 121
— false and minor.....121, 274, 275
— its nature..... 149
— the neutral precadence must always precede the final cadence .165, 193, 214, 220, 269, 274, 278
— every precadence, that of *Do* natural excepted, contains an alterative sign 181
— of *Do* used as cadence of *Sol*..... 184
— all precadences present a succession of three-thirds..... 198
— belongs to the arsis..... 246
PRECADENCE, why the neutral, is common to both modes..248, 269, 274, 278
— formation of the precadence by any alteration of the harmonic root 260-273
— of the minor mode, the harmonic root is the characteristic..... 269
— instructive observation deducted from the collocation in a diatonic order of the notes forming the cadence and the minor precadence of the typic minor scale..... 275
— generation of the false or immodic.. 275
— recapitulation of the alteration of the. 277
— generation of the false or immodic, and minor..... 278
— character of the precadence, according as it has note 5, note 6, natural, or 6, flat..... ib.
— formation of the..357, 358, 359, 360, 379, 392
— cadences are incomplete precadences by understood conjunctions of the key four degrees higher..... 371
— immodic nature of the neutral..... 379
— analysis of the.....379–381
— and cadence, cause of the sufficiency of the two chords called.....385, 386
— amalgamation of the transcadence with the..... 393
— different use of the various.....393, 394
— how cadences discharge the office of. 416, 417
— difference of the precadencial strength of the cadence of *Sol* towards *Do*, or the cadence of *Do* towards *Fa* with the cadence of *Fa* towards *Sol;* a difference applicable to all typometers.....419, 420
— the minor mode exists without having been generated by the precadencial dissonance..... 422
— alteration required by any precadence that it should become precadence of the transcadence of its own typometer or key..... 435
— why the precadence is unaccented and belongs to the arsis or weak time of the measure or bar..... 438
— a piece of music may begin with the cadence or the precadence, but never with the transcadence..... 440
— use of the false precadence, formerly chord of seventh on the sensible.... 447
— difference felt by the ear between an altered cadence and a pure..... 449
— the neutral and the minor, are natural sonorities..... 451
— in all motions of a melody, a precadence is either expressed or understood 455
— there is no musical composition that does not proceed through the successive alternateness of precadence and cadence.... 457
PRECADENCIAL, signification of this adjective.....§ 20, 15
— alterations.....248–254
— where an alteration can take place.. 249

PRECADENCIAL, example of the same in major keys with sharps.....ib. 250
— general law with regard to the chord and note which receive the, alteration in the modulation of major keys..... 250
— *rule*, 3rd example of, alterations in the modulation of major keys with flats..... 251
— alterations in the two typic scales... 251
— example of, alteration in minor keys with sharps..... 253
— — in minor keys with flats..... 253
— generation..... 260
— alteration, every destruction of the harmonic root is a.....260–280
— formation..357, 358, 359, 360, 379, 392
— how the transcadencial and the precadencial character and sonorousness are united in the three precadences.. 393–395
— the, character is an essential one in the dominant..... 404
— the note 2 is the least efficacious of the precadencial sonorousness..... 435
— the, influence or power is stronger than the cadencial one..... 453
PREFACE, the elements of music, with which this volume commences, were written for the purpose of enabling its purchasers to acquire, with it alone, a complete knowledge of the science of music, from the names of the notes to the art of correctly composing a score for a full orchestra .xxxi
— caution given to those who begin the study of music in the elementary chapters which are prefixed..... ib.
PREGHIERA, passing notes are generally made to harmonize together in a..... 130
PREPARATION..... 60
— parts of time proper for..... 61
— indispensable..... ib.
— is the first of the three times of a dissonance..... 199
— of the first dissonance in a series of dissonances..... 203
— of a dissonance..... 217
— of the fifth..... 371
PRETONIC, the meaning of this word.. § 20, 75
PROGRESSION, diatonic, chromatic, and enharmonic..... 21
— harmonic..... 70
— the chromatic and harmonic, are not musical genera.....§ 62, 84
— the diatonic, is the only real basis of a rational and efficacious musical genius..... § 62, p. 84, 349
— origin falsely attributed to the diatonic..... 351
— primitiveness and excellence of the diatonic.....352, 353
— the chromatic and the harmonic, are not productive of melody..... 421
PROLONGATION (note)..... 176
— example of..... 276
PROLONGATION and retardation, example of, in a quartet by Catel. 283, 284
— is equal to retardation..... 373
— farther example of..... 411
PROPOSAL, *intent*, or *subject* of a fugue. 301, 309
— its due length or proportion....312, 315
— proportional gravity or acuteness between the proposal and the answer of a fugue.....315, 321–330
— the proposal or *subject* of a royal fugue should begin with the tonic.318 319

QUARTET, what it is..... 93
— analysis of a celebrated.....181–196
— Geneuphonic cyphering and analysis of a, by Catel.....283–286

RAMEAU, musical system of.....350, 353
RAMOS, Bartholemew, was the inventor of the temperament..... 429
REFUTATION of an absurdity..... 448
REICHA, a counterpoint of, in eight parts..... 468
RICHTER, a quartet by..... 190
— three old canons by..... 483
RELATION, false..... 64
— of gamuts between mode and mode... 113
— monochord.....§ 17, 75
— resonantic.....§ 21, ib.
REMPLISSAGE, or rather interior parts.. 167
REPEAT or *reference*..... 13
REPETITION is the name given to the fugue by several authors..... 309
REPLY, *consequent*, or *answer*, of a fugue..... 310
(See *Answer*.)
REPULSION and attraction exercised by the tonic potency.....395, 451, 452
RESOLUTION.....60, 61
— example of..... 130
— law of.....179, 180, 372
— it is third of the three times of a dissonance..... 199
— of a dissonance..... 217
— the observation of the rules drawn from the typometric formula leaves no room for insufficient, irregular, and faulty..... 385
— origin and the law of..... 391, 392
— general rule on..... 430
— the, of the precadencial second is necessary to restore to the ear its resting quietness..... 453
— of cacophonies, of double and triple dissonances..... 457
RESONANCE, relation of.....§ 24, 75
— what it is.....§ 46, 79
— its tonic sound.....§ 46, 79
— an award on the system of..... 350
— its origin or formation, according to Rameau and D'Alembert.....350, 351
— is a fact, not a principle..... 400
— in the systems of resonance and fundamental bass, all is a result, but not a principle..... 451
RESTS, their proportion or temporal value..... 5

RETARDATION is a suspension of the utterance of consonance, and a delay of the resolution of a dissonance. 65
— example of..... 130
— explanation of..... 176
— retardation of octaves, forming a progression of ninths.....277, 279
— example of prolongation and retardation *of third on the seventh on the dominant*, in a quartet by Catel.... 284
— of the third and octave on the perfect chord.....285, 372
— is equal to prolongation..... 373
— by ornamental notes..... 376
RETROGRADATION, typometric..... 434
RHYTHM, cause of the necessity of.... 4
— constitution and division of.....8, 162
— the primitive, is the trinary measure. 387
— origin of the two accents or characters of rhythm, viz. the thesis and the arsis..... 390
— a model of the due conformity between sonorousness and, (*note*)..... 400
— importance of the note 4 as to..... 403
— *note*, explanation of the above model 439
RIPIENO..... 167
ROOT, theory of the harmonic..... 255
— its names in the ancient systems.... 258
— it is exclusively minor..... ib.
— it contains its 4 tonogamic powers.. ib.
— the harmonic root exhibits 36 keys graphically different..... 258
— simultaneous descent of the harmonic. 259
— from the alterations of the harmonic root every precadence is derived.... 260
— sixteen destructions of the harmonic.. 261-268
— the harmonic root is the characteristic precadence of the minor mode..... 269
— the harmonic root offers the most expeditious way of modulation and transition..... 269
— example of transition from one key to another through the destruction of the harmonic.....270, 271
— destruction of the harmonic root producing an altered neutral precadence. 272, 273
— the fifth destruction of the harmonic root explains both the nature and the thorough bass, hitherto never understood, of the chord alluded to, also called the chord of *diminished sixth*, or of major seventh with tritone 274
— the true typometric bass of the harmonic..... ib.
— essential character and precious privilege of the harmonic..... 427
— abuse of the penetrating effect caused by the destruction of the harmonic.. 428, 429
— thrilling effect produced by the descent of harmonic..... 422
ROSSINI's inspection of the Royal Conservatory of Music, and approval of the Geneuphonic theory.....464–466
— a canon in four parts extemporally composed by the same author, in honor and sanction of the Geneuphonic theory..... 484
— the author's opinion of that composition 465
ROULADE.....17, 60
ROUSSEAU, J. J. quotation from, with regard to lost sounds in the system of resonance..... 355
ROYAL fugue, tied..... 317
— free or untied.....317, 318
— fugue by contrary motion, tied..... 336
RULE, the golden..... 151–156
— — retrospection to.....405–409
— all the examples relative to the golden rule, written in letters from p. 152–174, translated to musical writing. 405–409
SCALES, their essence and names.....2, 73
— their characters..... 2
— natural extent of the.....2, 21
— major and minor.....29, 30
— irregular minor..... 31
— the regular minor, the only true one. *Note* 32
— chromatic.....34, 35
— general table of.....48, 49
— the teaching of harmony and counterpoint grounded on the erroneous system of the existence of real difference between scale and scale can produce no other results than inextricable difficulties and unsafe rules. §66, 85
— affinity or kindred of....§ 40, p. 77, 78
— their formation..... ib.
— numberless exceptions, inevitable contradictions, and complications, arising from the diversity of..§ 66, 85
— or gamuts, origin and constitution of. 96-103
— correlation of..... 100
— community of sounds between scales. § 11, *Rules*, p. 101–103
— the three, of a same note..... 104
— the twelve, to be rejected as absurd. 108
— relation of..... 113
— and comparisons, sympathy between. 114
— absurdity of scales constructed by means of double sharps or double flats.....105, 108, 116
— relative..... 117
— what is said of one scale is applicable to all..... 134
— any octave or scale is composed of the second tetrachord of the next inferior scale joined to the first tetrachord of the next superior scale.... 146
— apocryphal origin of the diatonic scale or gamut..... 350
— primitiveness and excellence of the diatonic scale..... 352, 353, 377
— the Greek scale or gamut.....400, 401
— conformity of the Greek scale with the Geneuphonic principle....400, 401
— observations on the Greek scale, *Note*, 400
— discovery of another Greek scale in a MS. found in Switzerland..... ib.
— analysis of the same.....400–438
— refutation of the objections made against the leap of a minor third in a minor scale..... 423

SCALES, the irregular minor, is a precadencial alteration which changes the scale..... 423
— extremely curious facts arising from the tetrachordic division of the Greek scale or gamut..... 426
— hypothetic formation of the diatonic scale from any given sound taken as primitive.....431, 432
— analogy of..... 436
— the Greek gamut or scale is the source of great instruction....438, 439
— proportions of the notes of the scale. 439
SCORE, a full, does not consist of more than four really different voices or parts..... 141
SDRUCCIOLO (passing notes)..... 170
SECOND, chords of..... 55
— the interval of second is the only dissonance.....§ 48, 79
— the accession of a second to any chord produces a clashing of two tonics, the collision of which changes the key..... .....§ 72, 87
— refutation of the doctrine on which ancient theorists ground their explanation of what they call *use and management of the second of the minor mode without preparation.* 447, 448
— the resolution of the precadencial second, by the cadence or by the tonic only, is necessary to restore to the ear its resting quietness..... 453
— generating ..87, 205, 206, 248–254, 356, 411–413, 453, 459
SECONDARY or *ornamental* fugue..... 333
SEMITONES..... 20
— major and minor..... 21
— each, may be employed as a key-note 22
SENSIBLE, or *leading note*, or *seventh*. 23
(See *Seventh.*)
SEVENTH, or *sensible*, or *leading note*. 23
— the, is altered in all the keys of the minor mode.....47, 49
— why the alteration of the seventh is to be accidental..... 50
— chords of the..... 55
— on the dominant, chord of the..... 56
— on the sensible.....56, 380
— chords of the diminished.....56, 380
— importance of the.....§ 3, 73
— the seventh note, *Si*, is not less a tonic than the third note, *Mi*, or the other five; the chord built on the seventh, *Si*, to the fourth, *Fa*, of the following octave has for its real tonic the note *Sol*, and is no other than the precadence of the key of *Do*.....§ 66, 85
— and the tonic, invariable law between the..... 112
— on the sensible, a chord so called in ancient theories..... 274
— strength of the pretonic or precadencial character of the note seventh 400
— or the sensible, is truly the tonic dominant..... 403
SEVENTH on the sensible, or false precadence, use of the chord of the.... 447
— the chords of seventh, of sensible, and of the diminished seventh, are natural and euphonic, though dissonant sonorities..... 451
SHAKE..... 17
— full, or prepared..... ib.
— broken, or simple..... ib.
— and the cadenza, theory of the..440–442
— definition of the..... 441
— with the shake the dissonance relates to the precadence..... 442
— cannot take place in four parts..... 442, 452
SHARP..... 11
— progressive order of the..... ib.
— fixed or essential..... 12
— intermediate or accidental..... ib.
— double..... ib.
(See *Alterative Signs.*)
SIGN, chromatic..... 11
— or signo..... 13
— birth of alterative.....100, 145
— folly of scales formed with the aid of duplicated alterative.....104, 105, 108, 116, 258
— order and correspondence of scales as to alterative..... 115
— conversion of a note into note 7, or into note 4, by an alterative...121, 122
— the absence of a due alterative sign transforms the melody in cauto fermo..... 187
SIGNATURE, what it is.....p. 42, § 2, 73
SINGING, what it is..... 197
SIXTH, or sub-mediant.....23, 402
— according to the ancient theories still in use, nature of the..... 28
— erroneous denomination of the..... ib.
— the, as well as the third, constitute the mode..... 32
— the, is modic.....§ 5, p. 74, 113
— use of note 6 in the typometer..... 121
— with the third, affinity of the..... 248
— why the sixth or second third (4—6) is less efficacious than the first third (1—3)..... 390
— chord of the great..... 414
— thorough examination and minute analysis of the chord of great..414, 415
— the chord of great sixth is precadencial. *Second Dialogue*.....414–420
— it is one of the destructions of the harmonic root.....417, 418
— chord of the fourth and sixth..... 436
SKIP: when a melody, to pass from one chord to another, effects a skip greater than is indicated in the typometric formula, that melody is about to change its place or position with another..... 450
— difference between skips of tritone, according as they do or do not proceed through enharmonic transition or equivalence..... 454
SLIDE..... 15
SLUR..... 13

SOLFA, proposal of a new mode of teaching the..... 396
SONOROUSNESS, what it is.....§ 22, 75
— generation of every precadencial sonorousness by the destruction of the harmonic root..... 260
— the three precadences unite the transcadencial to the cadencial sonorousness and character.....393–395
— the first euphonic sonorousness of nature is the minor third..... 432
— with rhythm, a model of the conformity of..... 400
— and explanation of the note containing the said model.....438–440
— the, of tonic, third and fifth, is not the only natural one..... 451
SOPRANO or TREBLE, clef of mezzo soprano..... 2
— clef of..... ib.
SOUND..... 20
— division of the octave into twelve, which is the cause or basis of melody and harmony..... ib.
— inequality of the seven..... ib.
— homogeneousness of several.....33, 34
— of keys without homogeneous simulatives..... 45
— generative..... 53
— every, is a tonic.....§ 28, 76
— a difference of, between a sharpened note and the next above flattened, is perceivable on bowed instruments; hence the preservation of the habit of writing, even for fretted and keyed instruments, with the accidents arising from enharmonism. § 64, 84
— definition of musical..... 94
— division of the, into heptachords and tetrachords..... 96
— 1, 4, and 5, supremacy of the..... 115
— the patient, of a dissonance..... 200
— a series of minor thirds employed the lost sound, not expressed in the diatonic progression..... 356
— distinct ways in which the sounds or notes of any melody can proceed... 454
SPRING..... 15
STACCATO touch..... 13
STAVE, or STAFF.....1, 2
STRUCTURE of musical pieces..... 280
SUB-DOMINANT, or *fourth*.....23, 401
— chord of 3rd, 5th, and 6th upon the.414–421
SUBJECT, *motive*, or *intent* of a fugue, what is the 301, 309
— its proportion, or proper length.312, 315
— and answer in any fugue, respective elevation or gravity between the 315, 321–330
SUB-MEDIANT or SECOND.....23, 401
— its name is also applied to note 6, on account of its being a modic sound jointly with note 3, to which, as such, it is inferior..... 402
SUSPENSION, what it is, and example of it 65
— principal..... 66
SYLLABIC, the, name of a note suffices to indicate in every scale the number borne by the said note, which is always reckoned from the tonic. The same syllabic name consequently explains the nature and composition of all chords unerringly and without exception..... 448
SYMPHONY, names of the parts of which it is composed..... 296
— rules for the composition of a..... 297
SYNALEPHA or SYNÆRESIS (musical). 175, 176
SYNCOPATION.....8, 162, 176
— *note*, difference between it and syncope ib.
SYNCOPE, explanation of the..163, 164, 165, 176
— a series of, in two quartets, with the explanation of their management.183–196
— to prepare dissonances..... 235
— necessary in a canon..... 364
— retrospection to the rules of, in which the literal example of page 178 is musically written..... 410
— another example of..... 411
SYNONYMY of precadence with dissonance, of cadence with consonance.. 356
SYSTEM, the Geneuphonic, rests on a sole and universal principal..... 221
— defectiveness of the musical, grounded on numerical proportion, or mathematical calculation..... 436
TABLE of measure or time..... 10
— of relative keys, or complete table of all keys..... 46
— of keys in use in the major and minor mode.....48, 49
— of the march of consonances..... 63
— comparison of the table of polytogamism with the typometric, and special use of the latter.....§ 71, 87
— of modulation and transition..... 95
— of the cyphering of the gamut..... 95
— of heptachords..... 97
— of polytonogamism..... 105
— typometric..... 112
— rules drawn from the observation of the typometric..... 112
— synoptical table of a radical formula, ruling harmony..... 137
— of the generation of gamuts..... 205
— of inversions of the triple and the quadruple counterpoint at the octave 243
— general, of modulations and transitions, from one key to another..... 413
— comparative harmonic, or correspondence between voices and instruments 462
— its explanation..... 461
TEMPERAMENT, invention of the..... 429
— revolution created in music by that invention..... ib.
— its definition, and its superiority over any system grounded on mathematical calculation..... 436
TENOR, clef proper to the..... 195
TERMS, characteristic..... 19
TERZETTO or TRIO, what it is..... 93
— Geneuphonic cyphering and analysis of a minuet and trio by Haydn..287–298

TETRACHORDS, the two, of one octave harmonized together.. ..§ 40, p. 77, 145
— the two extreme notes of, produce a magistral, absolute, or final cadence § 41, 78
— division of sounds and of scales in... 96
THEME, the, of a fugue is its *subject* or *motive*.....301, 309
— proportion of the, guide, or proposal of a fugue.....312, 315, 321–333
(See *Antecedent* or *Proposal.*)
THESIS, or *accented* or *strong part of time*.....59, 162, 163
— a note of the, may be sometimes considered as a passing note..... 130
— origin of the..... 390
THIRD, OF MEDIANT..... 23
— nature of the, according to the ancient theories still in use..... 28
— erroneous denomination of the..... ib.
— the, and the sixth, constitute the mode. 32, 113, 248, 390
— the, of the tonic of a major key is the fifth of the tonic of its relative minor. 51
— importance of the.....§ 3, 73
— the, is modic.....§ 5, 74
— the, is the only consonance..§ 27, 30, 76
— supremacy of the minor.....§ 49, 79
— nature of the major.....§ 50, 79
— preeminence of the, over the fifth... § 41, p. 83, 84, 183
— result of an uninterrupted progression of major.....§ 72, 87
— the major, is a dissonant augmentation of the minor one..... 95
— signification of the dot after a 3 and a 6..... ib.
— the, contains the elements of melody, of consonance and dissonance..... 148
— it comprises key, mode, and rhythm. ib.
— the, is more important in a cadence than the fifth..... 161
— tendency to dissonance of the major.. 248
— appearance of the major, in the act of modulation..... 248–254
— the minor, is the primitive consonance.....254, 255
— the repetition of the minor, in one and the same chord may be endless.... 255
— the unalterableness of the minor.... 258
— the minor, is the law..... 260
— a series of minor, affords the means of using the lost sounds which are not expressed in a diatonic progression..... 356
— the alteration of the, is the only medium or channel to modulation and transition..... ib.
— there is no direct motion except by a succession of..... 370
— melo-harmonic properties of the..386–392
— the, is the mould and the type of melody, of harmony, and musical motion..... 387, 389
— why the, is more efficacious than the sixth..... 390
— why the third, viz. 7-2, is less efficacious than the other two..... ib.
THIRD, examination of note 3, as *dominant*, on account of its importance.. § 3, p. 73, 402, 403
— refutation of the objections against the leap of minor third in the minor scales..... 423
— the harmonic strength of the third is greater than that of the fifth.....424
— the first euphonic sonorousness of nature is the minor..... 432
TIME, division of, viz. or rhythm..5, 8, 9, 10, 59, 161, 162, 163
— why the cadence belongs to the strong, and the precadence to the weak.163,
TONE. (See *Degree.*) 437, 440
TONES and SEMITONES..... 20
TONIC SYSTEM, what it is..... 23
— ascendency of the tonic potency.... 430
— attraction and repulsion exercised by the tonic potency.....395, 451, 452
TONIC or key-note.....20, 23
— distance of any sound from the..... 33
— adopted and rejected.. .....37, 38
— its distance with respect to the last flat and to the last sharp in the keys of both modes.....42, 43, 44
— importance of the .....§ 3, 63
— every musical composition must begin and end with the..... 155
— in all musical compositions, the principal operation is to run after and fly from the.....395, 396, 451, 452
— number of, perceptible in the extent of one heptachord.. .....§ 63, 84
— before its birth, nature exhibits the presence and action of its generators 452
TONISM, definition of..... 421
TONOGAMIC potency, what it is..... 104
— destruction and reproduction of.....248
— attraction and repulsion which its potency exercises on the ear....385, 395
— competition or fight of.....459, 460
TRANSCADENCE.....§ 4, 73
— to the, may be added either note 1, octave or the note 2, the former is preferable.....§ 55, 81
— the, of a key is the cadence of another key four degrees higher than the first.....142, 371
— its nature..... 147
— the, follows the rhythm proper to the cadence..... 246
— its affinity with the cadence..... 248
— alteration of the.....278, 279, 414, 421
— analysis of the.....381–383
— services made by the.....382, 383
— the, is not indispensable to the construction of melody..... 392
— its amalgamation with the precadence 393
— why it may be uttered before the cadence..... 434
— alterations with which one key may become complete precadence of the cadence, which the addition of note 4 renders complete precadence of its own typometer..... 435
— why the cadence is more accented than the.....390, 437, 438

TRANSCADENCE, no piece of music can begin with the..... 440
TRANSCADENCIAL, meaning of....§ 20, 75
TRANSITION, enharmonic..... 22
— when it takes place..... 40
— rules for..... 40
— difference between transition and modulation.....§ 39, 77
— when effected..... 98
— sole and universal rule of modulation and..... 135
— to six different keys through enharmonism..... 138
— practical exercise for modulation and 149
— expeditious manner of effecting a.... 269
— example of a transition from the key of *Do* natural major, to that of *Si* natural, both major and minor, by means of a destruction of the harmonic root..... 270, 271
— the only medium or channel to modulation and transition is the alteration of the minor third..... 356
— theory and examples of the inversion of the typometric formula, or interchange of its parts in the act of effecting a.....364–368
— any transition must be effected at the unaccented part of the measure.... 388
— example of, presented as a model of a change of key..... 411
— table of all, from any key to another. 413
TRANSPOSITION, rules for..... 149
TREATISE, practical..... 91
— theoretical or confirmatory..... 348
TRIAD, harmonic.....p 27, 53, § 24, 75
— correspondence or affinity between.. 359
TRIANGLE, the..... 464
TRILL. (See *Shake.*)
TRIPLETS..... 7
— double triplets..... ib.
— melodic..... 387
— great harmonic..... ib.
— theoretical analysis of the same..... ib.
TRISOUND, meaning of.....§ 25, 75
TRITONE, what it is.....§ 49, 79
— double..... ib.
— composition of the..... 278
— it is essentially precadencial..... ib.
— it is the safest indication of the key.. ib.
— chord of, with minor third.....380, 381
— nature, character, and importance of the..... 426
— it can never be dissonant..... 427
— difference between skips of, according as they do or do not proceed through enharmonic transition or equivalence..... 454
TROMBONES, their use..... 464
TRUMPET, bass..... 464
TURN..... 16
— inverted and partial..... ib.
TWO-THEMED or double fugue.....333–335
TYE or LINK..... 13
TYPOMETER, what it is.....§ 26, 75
— the three groups of, are the obliged accompaniment of every melody.§ 42, 78
— the, is the only mode of melody..§ 43, 78
TYPOMETER, the meloharmonic, is the source of all musical rules....§ 52, 80
— subordination of the second and third group of the typometer to its first group..... ...§ 54, 81
— the second and the third group of the, may be increased with thirds..... ib.
— its second and third chord are subservient to the first.....§ 58, 82
— the melo-harmonic, is the mould of melody and harmony; it explains all musical operations..§ 59, p. 59, 450
— universality and excellence of the, its co-ordination and march...§ 72, 88
— paradigm of the..... 110
— why it consists of three chords, whilst there are really but two in music... 142
— the origin and formation of the three groups of the.....145, 197
— exchange of places between the chords of one typometer to become chords of another.....147, 148
— the rules of preparation, percussion, and resolution, the golden rule, and those of the movements of parts in harmony, are exemplified in the.208,369–372
— the, is a true canon.....301, 302
— explanation of the melo-harmonic... 361
— it exemplifies all the rules and operations of musical composition..... 362
— in canon, for four voices, with the addition of the typometric bass for a fifth voice or instrument.....363–368
— the, is the mould of all canons whatever 365
— theory and examples of its inversions, or interchange of its parts in the act of effecting a transition..... ib.
— why of the two cadences really contained in the, the first is more powerful than the second..... 371
— the, flourished with passing notes, and harmonized in a quintet..... 373
— inward construction and mechanism of the same..... 374
— complete analysis of the.....377–383
— the rules derived from the, leave no room to defective or insufficient resolutions..... 385
— manner of extending to four times the, which, in its essence, is trinary.... 436
— when a melody, to pass from one chord to another, effects a skip greater than is indicated in the, that melody is in the act of changing with another the place or position it occupies in harmony..... 450
UNISON.....§ 10, 74
— its value.....§ 18, 75
UNITY, the three musical, are scale, key, and mode..... 377
VARIATION, twelve different examples of, of one same theme.....131–133
VIOLIN..... 464
VIOLONCELLO or BASS..... 464
VOICES, diapason of the different..... 462
— table of correspondence between, and instruments..... 462

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